COPING STRATEGIES OF OLDER JORDANIAN ADULTS WITH CHRONIC ILLNESS

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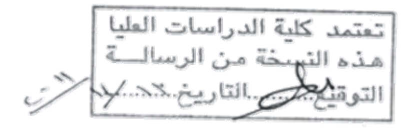
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اقرار والتزام بالمعايير الأخلاقية والأمانة العلمية وقوانين الجامعة الأردنية وأنظمتها وتعليماتها لطلبة الدكتوراه

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عنوان الاطروحة: Coping Strategies of older Jordanian adults with chronic Illness

اعلن بأنني قد التزمت بقوانين الجامعة الأردنية وأنظمتها وتعليماتها وقراراتها السارية المفعول المتعلقة باعداد اطروحات الدكتوراه عندما قمت شخصيا" باعداد اطروحتي وذلك بما ينسجم مع الأمانة العلمية وكافة المعايير الأخلاقية المتعارف عليها في كتابة الأطروحات العلمية. كما أنني أعلن بأن اطروحتي هذه غير منقولة أو مستلة من أطاريح أو كتب أو أبحاث أو أي منشورات علمية تم نشرها أو تخزينها في أي وسيلة اعلامية، وتأسيسا" على ما تقدم فانني أتحمل المسؤولية بأنواعها كافة فيما لو تبين غير ذلك بما فيه حق مجلس العمداء في الجامعة الأردنية بالغاء قرار منحي الدرجة العلمية التي حصلت عليها وسحب شهادة التخرج مني بعد صدورها دون أن يكون لي أي حق في التظلم أو الاعتراض أو الطعن بأي صورة كانت في القرار الصادر عن مجلس العمداء بهذا الصدد.

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تعتمد كلية الدراسات العليا
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Committee Decision

This Dissertation (Coping Strategies of Older Jordanian Adults with Chronic Illness) was Successfully Defended and Approved on the 2nd of October 2011.

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Dedication

This dissertation is dedicated to the memory of my father, who always supported me in my pursuit of higher education. Unfortunately, he passed away before he could see my dream come true. Also I would like to thank my mother for her continuous never ending love and support.

My sincerest gratitude goes to my wife Amel and my daughters Hebeh and Sadeel, who held unquestionable faith in this effort from the beginning and who served as motivating forces. I want to especially thank my brothers and sisters: Hussein, Yousef, Ibraheem, Ahmad, Abdullah, Aisheh and Hanan for their constant love, encouragement and support throughout my doctoral program and this study.

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List of Abbreviations

Symbols		Definitions
Alpha (α)	:	Level of Significance
ANOVA	:	Analysis of Variance
CABG	:	Coronary Artery Bypass Graft
CDC	:	Center of Disease Control and Prevention
CHD	:	Coronary Heart Disease
CHF	:	Congestive Heart failure
CI	:	Confidence Interval
COPD	:	Chronic Obstructive Pulmonary Disease
DM	:	Diabetes Mellitus
DOS	:	Department of Statistics
ESSI	:	Enriched Social Support Inventory
GCQ	:	General Coping Questionnaire
HADS	:	Hospital Anxiety and Depression Scale
HbA1c	:	Hemoglobin, Type A1c
JCS	:	Jalowiec Coping Scale
KHMC	:	King Hussein Medical Center
M	:	Mean
MI	:	Myocardial Infarction
MOH	:	Ministry of Health
NIDDM	:	Non-Insulin Dependent Diabetes Mellitus
PHQ-2	:	Patient Health Questionnaire -2
PCI	:	Percutaneous Coronary Intervention
PTCA	:	Percutaneous Transluminal Coronary Angioplasty
RMS	:	Royal Medical Services
SD	:	Standard Deviation
SF-12	:	Short Form Health Survey – 12
SPSS	:	Statistical Package for Social Science
S/W/D	:	Single/Widow/Divorced
WCQ	:	Way of Coping Questionnaire
WHO	:	World Health Organization

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ABSTRACT

In recent years a greater number of the population is likely to suffer chronic diseases as they age. Chronic diseases are considered the most common cause of death in the world. In Jordan, diabetes mellitus, heart disease, hypertension, arthritis, stroke, asthma, and depression are considered to be the most common chronic diseases. Consequently, effective management of chronic illnesses challenges both health care providers and older adults themselves, because each plays a central role in the successful long term management of their chronic illnesses.

The purpose of this study is to describe the coping strategies used by older Jordanian adults to cope with the most prevalent chronic illnesses. The research questions for this study were: What are the coping strategies used by older Jordanian adults to cope with chronic illnesses? Are there gender differences in coping strategies used by older male and female patients? Are there different coping strategies used by older adults based on the most prevalent chronic illnesses? And are there differences in coping strategies used by older adults who suffer from one chronic illness, compared to those who suffer from two or more chronic illnesses?

This study used a descriptive cross-sectional design. Quota sampling technique was used to recruit 184 older adult subjects who attended the outpatient clinics at King Hussein Hospital and Queen Alia Heart Institute (QAHI) with the diagnosis of cardiac diseases, diabetes mellitus or both diseases. Data were collected through structured interviews using the Jalowiec Coping Scale.

The results of the study showed that there were more men than women (114 vs. 70). The majority of the subjects were married, although more men were married than women. Women had lower levels of education and literacy than men in all the three disease groups. Seventy-five (41 %) of the subjects had a cardiac diagnosis, 57 (31.0 %) had a diabetes (DM) diagnosis, and 52 (28 %) had both diseases. Subjects in all three groups, both men and women, used *Prayed or put your trust in God* as their number one coping strategy, and also perceived it as the most effective coping strategy, with no statistical differences between groups and between male and female patients. They also, identified *Supportant* and *Emotive* as the top two most used coping styles, with no statistical differences. However, the use of coping styles that were statistically different included *Evasive* and *Self- reliant*, both of which were used more by men than women. Additionally, there were statistical differences in the use of *Emotional-focused* strategies, again with men using

them more than women. Subjects in all three groups, both men and women almost used similar coping strategies and styles with only few statistically significant differences.

The findings of this study provided baseline data of how Jordanian older adults with chronic illnesses cope with their illness. This data can be used by health care providers to be more sensitive in identifying specific strategies to encourage more adaptive *Problem-focused* coping strategies and discourage maladaptive ones.

Key Words: coping, chronic illness, older adults, Jordan.

Chapter One

Introduction

Background

In recent years, medical advances and healthier lifestyles have caused a remarkable increase in life expectancy. Consequently, a greater number of the population is likely to suffer chronic diseases as they age (Williams & Botti, 2002). Miller (2000) defined chronic illness as any altered health state that cannot be cured by simple surgical or brief medical treatments. Chronic illnesses include many negative characteristics such as, dependence, powerlessness, uncertainty, role changes, and diminishing physical abilities (Miller 2000). In Jordan, diabetes mellitus, heart diseases, hypertension, arthritis, stroke, asthma, and depression are considered to be the most common chronic diseases (Center of Disease Control and Prevention (CDC), 2006). Moreover, chronic diseases are considered the most common cause of death in the world, led by cardiovascular disease (17 million deaths in 2002, mainly from ischemic heart diseases and stroke), followed by cancer (7 million deaths), chronic lung diseases (4 million), and diabetes mellitus (almost 1 million) (The World Health Report, 2003).

Between 1990 and 2020, mortality from ischemic heart diseases in developing countries is expected to increase by 120% for women and 137% for men (Leeder, Greenberg, & Liu, 2004). The global number of individuals with diabetes in 2000 was estimated to be 171 million (2.8% of the world’s population), a figure expected to increase in 2030 to 366 million (6.5% of the world’s population), about 81.4% of whom will live in developing countries (Wild, Roglic, Green, Sicree, & King, 2004).

Effective management of chronic illnesses challenges both health care providers and older adults themselves, because each plays a central role in the successful long term management of their chronic illnesses. In light of the importance of self-care among this group, gaining a better understanding of the everyday decisions that older people make about their health (Thorne, Paterson, & Russell, 2003) and what strategies they use to cope with health-related challenges is needed.

The effectiveness of the coping strategies people use when they are faced with chronic illnesses may influence the quality of their life to a great extent. Coping is defined as "the constantly changing cognitive and behavioral efforts to manage the specific external or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman 1984, p.141). Donnellan (2006, p. 1208) defined coping strategies as "the specific efforts, both behavioral and cognitive, that people use to master, tolerate, reduce or minimize stressful events".

Jordan is a small country located in the Middle East, in the south-western part of Asia with an area of approximately 89.342 sq km. Approximately 98% of the population is Arab; other ethnic groups include Circassian, Chychnian and Armenian. Islam is the official religion; Sunni Muslim constitutes 92% of the population, Christian 6%, and other 2% (several small Shia Muslim and Druze populations). Although the country is composed of 12 governates approximately 71 % of the population live in the three major governates; Amman (38.7 %), Irbid (17.8 %) and Zarqa (14.9 %) (DOS, 2010).The family is the key social unit to Jordanians. This loyalty influences all aspects of a Jordanian’s life. Large families provide for possible economic benefits, particularly for the possibility that a

son will care for his parents in their elderly years. Large families provide the father with the prestige of virility (Diers, 2009).

The Jordanian census conducted in 2005, indicated that the population was approximately 5.5 million. Future population growth forecasts indicate that by 2050, the population will increase to between 8.5 and 14.8 million people and the proportion of older people (aged 60 years or older) will reach 15.6% (or approximately 1.8 million people) of the population by that time. This figure is more than three times that reported in 2000 (Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, 2007). During 2005, non-communicable diseases accounted for more than 50% of all deaths in Jordan; cardiovascular diseases and stroke (International Statistical Classification of Diseases (ICD-10)) accounted for 35% of all deaths (Brown, Walke, As'ad, Al-Nsour, Zindeh et al. 2009). In 2007 cardiovascular diseases accounted for 35.3 % (Ministry of Health, 2010). During 2004, approximately 400,000 (15%) Jordanian adults were reported to have diabetes (an increase from 7% in 1996), and an estimated 350,000 (12%) had impaired fasting glucose (Mokdad, 2007; Zindah, Belbeisi, Walke, & Mokdad 2008). Another study reported an increased prevalence of type 2 diabetes in Jordan from 12.9% in 1994 to 17.4% in 2004 (Ajlouni et al., 2008). In the same study the prevalence of type 2 diabetes in people older than 60 years increased from 22% in 1994 to 33.2% in 2004.

The identification and study of coping strategies in chronically ill older patients can be beneficial in expanding the nursing profession's understanding of ways to help patients cope. Specifically, it can aid in developing an understanding of how coping strategies can be conceptualized in different contexts among different groups of patients. Additionally,

knowing what coping strategies have been successful in the past can help nurses educate present patients to improve the quality of their lives, while living with chronic illnesses. Furthermore, it can help to determine the current state of knowledge in this area and create an awareness of the limitations previous studies faced which ultimately will assist in the future design of rigorous studies in this field.

Significance of the Study

Given the steady rise in the percentage of the older population and the projected increasing burden of chronic non communicable diseases in Jordan, specifically cardiovascular diseases and diabetes, it is important to study the coping strategies older adults use to cope with their chronic illnesses. This knowledge may influence many aspects of their life; knowing successful coping strategies will help nurses educate patients to improve their quality of life. Furthermore, as Loeb (2006) stated, enhancing older adults' self-care abilities through the promotion of positive coping will enhance self efficacy and well-being and may also help in decreasing health care expenditures.

Coping strategies older adults use to cope with their chronic illnesses may influence many aspects of their daily life. Knowing successful coping strategies will help nurses in the development of evidence-based nursing care plans and provide quality nursing care which can ultimately improve older adults' quality of life.

Coping and coping strategies in various populations have employed extensive literature from the developed countries. Moreover, most of the identified studies in the literature studied coping strategies in groups of patients with one chronic illness. This study will add to the existing knowledge by exploring the coping strategies of older adults with a

number of different chronic illnesses. Finally, findings of this study will be valuable for planning intervention studies aimed at promoting successful coping among older adults within the Arab cultural context.

Purpose of the Study

The purpose of this study was to describe the coping strategies used by older Jordanian adults to cope with the most prevalent chronic illnesses within the Arab cultural context.

Research Questions

The specific study questions are:

1. What are the coping strategies used by older Jordanian adults to cope with chronic illnesses?
2. Are there gender differences in coping strategies used by older male and female patients?
3. Are there different coping strategies used by older adults based on the most prevalent chronic illnesses?
4. Are there differences in coping strategies used by older adults who suffer from one chronic illness, compared to those who suffer from two or more chronic illnesses?

Conceptual framework

The concept of coping as a psychological concept has been evident in lay and scientific literature since the 1940s. It has been traditionally conceptualized in two separate

and different theoretical approaches; one derived from animal experimentation and the other from the psychoanalytic ego psychology. Neither approach provided comprehensive understanding of human coping (Lazarus and Folkman 1984).

The cognitive theory of Stress and Coping Coping developed by Lazarus and Folkman, is the most widely used theoretical framework for guiding studies that address coping with chronic illness (Frey, 2000; Ibrahim, Taboonpong, & Nilmanat, 2009; Lindqvist, Carlsson & Sjödén, 2004; Logan, Pelletier-Hibbert & Hodgins, 2006; Samuel-Hodge, Watkins, Rowell & Hooten, 2008); other studies refer to this framework implicitly (Brink, Karlson & Hallberg, 2002; Downe-Wamboldt, Butler, & Coulter, 2006; Klein, Turvey & Pies, 2007;Mok and Tam, 2001; Souza-Talarico, Chaves, Nitrini & Caramelli, 2008; St-Louis & Robichard-Ekstrand, 2003; Tung, Hunter, Wei & Chang, 2009; Ulvik, Nygård, Hanestad, Wentzel-Larsen & Wahl, 2008). Most of these studies used the conceptual definitions of stress, coping, and coping strategies and related concepts that were either used by Lazarus and Folkman, or used definitions that have some resemblance to Lazarus and Folkman's definitions.

The conceptual framework for this study was based on Lazarus and Folkman's (1984) cognitive theory of stress and coping (Figure 1.1). Lazarus and Folkman (1984) stated that stress, coping, and adaptation must be viewed in the context of an individual's ongoing relationship with his environment. They defined psychological stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p.19).

Lazarus and Folkman (1984) conceptualized coping as a process. They defined coping as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are taxing or exceeding the resources of a person" (p 141).

They addressed the limitations of traditional approaches in this definition: This definition is process-oriented rather than trait-oriented; it is concerned with what one actually thinks or does in a particular situation, and with changes in these thoughts and actions across encounters or as an encounter unfolds. Moreover, this definition differentiates between coping efforts and automated adaptive behaviors, and avoids the problem of confusing coping with outcomes, by defining coping as all efforts to manage apart from outcomes, meaning that coping include anything the person does or thinks, regardless how well or badly it works (Lazarus and Folkman 1984).

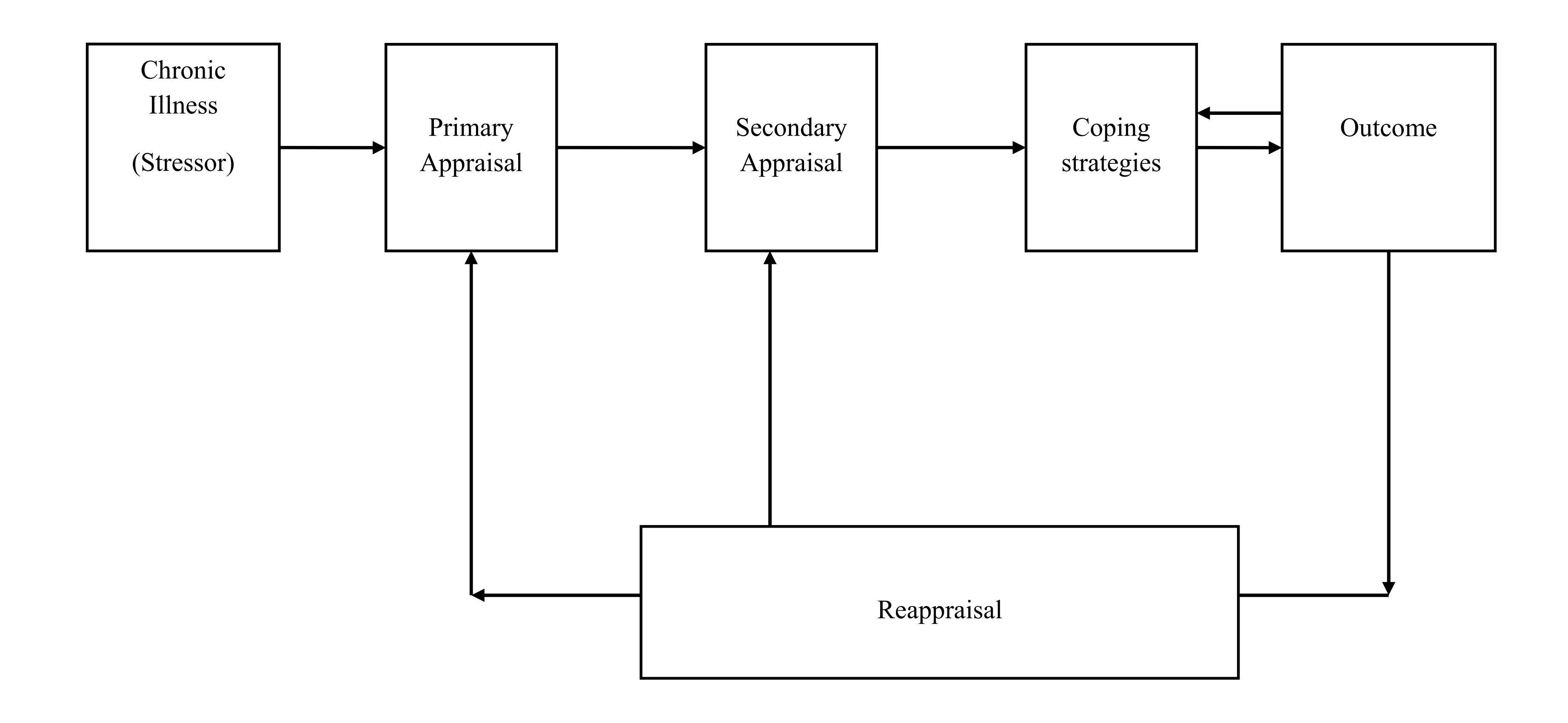


Figure 1.1 Conceptual framework of coping with chronic illness based on the Lazarus and Folkman's model of stress and coping (Lazarus and Folkman, 1984 p. 305)

In addition to conceptualizing the concept of coping, Lazarus and Folkman (1984) described coping strategies as representing those efforts, actions, or techniques that are used to deal with demanding situations. Coping strategies were classified into two major principal groups: *Problem-focused* and *Emotional-focused*. *Problem-focused* coping is directed to managing or altering the problem which causes the distress, through actively solving the problem, analyzing and exploring the causes of stressful situation, changing individual expectations, setting goals, seeking information, and becoming familiar with new techniques to enhance self-control. On the other hand, *Emotional-focused* coping is directed at regulating emotional responses to coping through inducing subjective changes in a person's thoughts, such as hopeful thinking, escape, acceptance, denial, and reactive behaviors. Generally, *Emotional-focused* types of coping are more prevalent when there has been an appraisal that nothing can be done to modify harmful, threatening, or challenging environmental conditions.

The way a person copes is largely determined by available resources. Lazarus and Folkman (1984) classified coping resources into personal and environmental resources. Personal resources include; health and energy, positive beliefs, problem-solving skills, and social skills. Environmental resources include social support and material resources. Lazarus and Folkman believed that recognizing the resources that one possesses contributes to a better understanding of specific ways in which people cope, and why people cope with things as they do.

Lazarus and Folkman (1984) claimed that certain constraints may limit the use of available coping resources. Examples include personal constraints, environmental constraints and the level of threat (Lazarus and Folkman, 1984). Personal constraints involve instances where internal feelings and beliefs may negatively or positively influence

the coping process. Environmental constraints, such as characteristics of the environment, limited services, physical barriers, may either decrease the benefits of coping strategies or resources, or increase the individual's level of stress. Finally, the level of threat that individuals feel, is seen as influencing both the choice and the implementation of coping resources and strategies.

This theory postulates that there is a continuous, reciprocal relationship between a person and his or her environment. This relationship is mediated by the processes of coping and cognitive appraisal. Cognitive appraisal is a judgment or evaluation, which involves identification of (a) the degree of demand (stressor) and (b) the existing resources that will assist to manage the stressful situation.

In the primary appraisal stage, the person evaluates the situation as: (a) irrelevant, meaning that it has no implications for the individual's well-being or carries no value, need, or commitment; (b) benign-positive, indicating that the outcome of the situation is seen as positive in terms of enhancing or promising to enhance the individual's well-being; or (c) stressful. When the situation is evaluated as stressful, it can be further analyzed as representing either harm/loss, threat, or challenge. Harm/loss refers to damage that has already happened, the effects of which are central and widespread and constantly produce stress. Threats refer to anticipated harm or losses that might occur in the future. Challenge refers to appraisals that focus on the potential for personal gain or growth (Lazarus and Folkman, 1984).

In the secondary appraisal stage, the person evaluates available resources and alternatives for managing stressful situations. Secondary appraisal allows the person to recognize coping options, assess the efficacy of a particular coping option to overcome the stressful situation, and evaluate the consequences of using particular coping strategies in

the context of other stressful situations. Reappraisal refers to changed appraisal as a result of new information from the environment and/or the person. Cognitive theory of stress and coping (Lazarus and Folkman, 1984) was appropriate for assessing how Jordanian older adults cope with chronic illness. This theory was widely used in the nursing literature also the instrument used for data collection is congruent with this theory.

Definitions

For the purpose of this study, the following definitions were used:

Chronic illness is conceptually defined as any altered health state that cannot be cured by simple surgical or brief medical treatments (Miller 2000). The operational definition of chronic illness in this study is the diagnosis of cardiac disease, diabetes mellitus (DM) or both diseases.

Psychological stress is conceptually defined as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman 1984 p. 19).

Coping is conceptually defined as "the constantly changing cognitive and behavioral efforts, to manage the specific external or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman 1984 p. 141). The operational definition of coping is the cognitive and behavioral efforts to manage the internal and external demands of the chronic illness that are taxing or exceeding the resources of the patient as measured by Part A of the Jalowiec Coping Scale (JCS) (Jalowiec, 1993) (Appendix C).

Coping strategy is conceptually defined as "the specific efforts, both behavioral and cognitive, that people use to master, tolerate, reduce or minimize stressful events" (Donnellan, 2006, p 1208). Coping strategies is operationally defined as the patients' response to Part A of the Jalowiec Coping Scale (JCS) (Jalowiec, 1993) (Appendix C).

Coping style is conceptually referred to as an aggregate of a patient's use of a subset of coping strategies, that people use to master, tolerate, reduce or minimize stressful events. Coping style is operationally defined as an aggregate of a patient's use of a subset of coping strategies from the 60 coping strategies listed on the Jalowiec Coping Scale (Jalowiec, 1993) (Appendix C).

Older adult is conceptually defined as an individual aged 60 + years and older (United Nations UN, 2001). The operational definition of older adult is the chronological age of 60 years and older.

Chapter two

Review of Literature

The purpose of this literature review was to critically evaluate the existing literature that addressed how older adults cope with chronic illness. This chapter is organized in the following sections: coping with chronic illness, coping with cardiac diseases, coping with diabetes mellitus, summary, assessment of coping and conclusion.

The identification and study of recent research studies on coping strategies in chronically ill patients can be beneficial in expanding understanding in this area. Specifically, it can aid in developing an understanding of how coping strategies can be conceptualized in different contexts among different groups of clients. Furthermore, it can help to determine the current state of knowledge in this area and create an awareness of the limitations previous studies faced which ultimately will assist in the future design of rigorous studies in this field.

Coping with Chronic Illness

Research literature contains a large number of studies that explore coping and coping strategies of various patient populations. The concept of coping with chronic illness has received great attention from researchers in different countries. In this review, 25 studies that discuss coping with chronic illnesses were critically appraised. Table 2.1 includes a summary of the reviewed studies. Of these studies, five were done in the United States of America (US) (Elliott, Ross-Degnan, Adams, Safran, & Soumarai, 2007; Frey, 2000; Loeb, 2006; Tak & Laffrey, 2003; Tak, 2006); four in Sweden (Ahlstrom & Wennenberg, 2002; 2005; Lindqvist, Carlsson & Sjödén, 2004; Persson & Rydén, 2006); three in United

Kingdom (UK) (Charlton & Barrow, 2002; Grande, Myers & Sutton, 2006; Narayanasamy, 2002), three in Iran (Hosseini, Sharif, Ahmadi, & Zare, 2010; Taleghani, Yeketa & Nasrabadi, 2006; Taleghani, Yeketa, Nasrabadi & Käppeli, 2008); two in Canada (Logan, Pelletier-Hibbert & Hodgins, 2006; Downe-Wamboldt, Butler, & Coulter, 2006); two in Hong Kong (Siu, Chan, Poon, Chui, & Chan, 2007; Yuet, Alexander, & Chun, 2002); one in Australia (Koch, Jenkin, and Kralik, 2004); one in Brazil (Souza-Talarico, Chaves, Nitrini, & Caramelli, 2008); one in Denmark (Delmar, Bøje-Dylmer, Forup, Jakobsen, Møller, Sønder, and Pedrsen, 2005); one in France (Ninot, Fortes, Poulin, Brun, Desplan, Préfaut & Varray, 2006); one in Indonesia (Ibrahim, Taboonpong, & Nilmanat, 2009); one in Netherland (Westerhuis, Zijlmans, Fischer, Andel, & Leijten, 2011); and one in Norway (Andenæs, Kalfoss, & Wahl, 2006). The researcher found few unpublished studies that were carried out in Jordan that addressed older adults coping. Gharibeh (2003) investigated the psychosocial stressors faced by older retired adults and how older adults cope with these stressors. The sample of this study was 312 older adults. Findings of this study revealed that coping is influenced by educational level (the more educated subjects coped better). Also subjects who were working coped better, and the family and social support where the most important coping resources. Another study by Al-Nawaiseh (2006) aimed to determine the problems of 235 older adults in Kerak and to develop a training program to help them cope with these problems. The findings indicated that most common problems of the subjects were related to health, social relations and entertainment. The most common coping methods were social support, expression of feelings and acceptance. Finally, Al-Tamimi (2006) investigated the effectiveness of a training program on anxiety, depression, and coping of patients with chronic renal failure. The sample of the study was composed of 20 subjects (10 in the experimental group and 10 in the control group). The findings

indicated that there were significant differences in anxiety, depression, and coping between the experimental and control group. Although these studies were not published, they provided valuable data about how older adults cope. All of these studies were not carried out by nurses, which reflect the great concern of the concept of coping by members of different disciplines.

Coping and coping strategies were studied in patient populations with different chronic conditions such as, chronic obstructive pulmonary disease (COPD) (Frey, 2000; Andenæs, Kalfoss, & Wahl, 2006; Ninot *et al.,* 2006; Yuet, Alexander, & Chun, 2002), epilepsy (Hosseini *et al.,* 2010; Westerhuis *et al.,* 2011), osteoarthritis (Tak & Laffery, 2003; Tak, 2006), breast cancer (Taleghani, *et al.,* 2008; Taleghani *et al.,* 2006), hemodialysis (Ibrahim, Taboonpong, & Nilmanat, 2009; Logan, Pelletier-Hibbert & Hodgins, 2006), lung cancer (Downe-Wamboldt *et al.,* 2006), Alzheimer's disease (Souza-Talarico *et al.,* 2008), Parkinson's disease (Charlton & Barrow, 2002), and kidney transplant recipients (Lindqvist, Carlsson, & Sjödén, 2004).

Coping styles and strategies

Coping strategies refer to the specific efforts, both behavioral and cognitive, that people use to master, tolerate, reduce, or minimize stressful events while coping styles refer to an aggregate of a subset of coping strategies (Jalowiec, 1993).

Older adults with different chronic illnesses tend to use a wide range of coping styles and strategies to cope with their illnesses. An *Optimistic coping style* was reported as the most commonly used coping style by patients with lung cancer (Downe-Wamboldt *et al.,* 2006); patients with COPD (Frey, 2000); people after kidney transplant (Lindqvist,

Carlsson & Sjödén, 2004); and hemodialysis patients (Logan, Pelletier-Hibbert & Hodgins, 2006). Other commonly used coping styles were; *Self reliant* and *Supportant* (Downe-Wamboldt *et al.,* 2006; Lindqvist, Carlsson & Sjödén, 2004); *Supportant* and *Palliative* (Logan, Pelletier-Hibbert & Hodgins, 2006); *Fatalistic*, *Palliative* and *Supportant* (Yuet, Alexander, & Chun, 2002); and *Palliative reaction patterns*, *Active confronting*, and *Avoidance* (Westerhuis *et al.,* 2011). Moreover, some studies that explored the effectiveness of coping styles as perceived by the patients reported that the most commonly used coping styles were also perceived by patients as the most effective (Frey, 2000; Logan, Pelletier-Hibbert & Hodgins, 2006; Yuet, Alexander, & Chun, 2002).

On the other hand, Downe-Wamboldt *et al.,* (2006) stated that the least commonly used coping styles were *Emotive* and *Evasive* coping styles. This position was supported by two studies that reported *Emotive* and *Confrontive coping styles* were the least commonly used (Lindqvist, Carlsson & Sjödén, 2004; Logan, Pelletier-Hibbert & Hodgins, 2006).

Logan, Pelletier-Hibbert & Hodgins (2006) indicated that the three coping strategies rated as being most used and helpful by older adults on hemodialysis were "*Keeping a sense of humor*", "*Look at the good side*" and "*Think positively*". These coping strategies are part of the *Optimistic* coping style. Andenæs, Kalfoss, and Wahl (2006) stated that the most frequently used coping strategy was "*Concentrating on what to do next*". Ahlström & Wennenberg (2002) indicated that *Distancing* was the most frequently used and *Accepting responsibility* was the least frequently used by patients with muscular dystrophy and post polio disease.

Coping and psychosocial adjustment

Several studies examined the relationship between coping and psychosocial adjustment of patients with COPD (Yuet, Alexander, & Chun, 2002); coping and stress among older women with osteoarthritis (Tak & Laffrey 2003); stress intensity and coping style in older people with mild Alzheimer's disease (Souza-Talarico *et al.,* 2008) and coping and psychological distress in COPD patients (Andenæs, Kalfoss, & Wahl, 2006). The results showed that the perceived use of *Confrontive, Optimistic, Palliative,* and *Self-reliant* coping styles were positively correlated with better psychosocial adjustment (Yuet, Alexander, & Chun, 2002). These findings were supported by Tak and Laffery (2003) who stated that older women with high levels of stress reported greater use of *Emotion-focused* coping strategies ($r = .42$, $p < .01$).

On the other hand, Andenæs, Kalfoss, & Wahl (2006) found that there were no statistically significant differences between patients with and without psychological distress with regard to the number of coping strategies used. However, problem solving coping strategies were inversely related to psychological distress. Similarly, Souza-Talarico *et al.,* (2008) found that the patients with Alzheimer's disease used more *Emotion-focused* coping strategies than their control group, though the difference was not statistically significant ($p = 0.124$). Moreover, subjects displaying better cognitive performance in the Alzheimer's disease group had selected coping strategies that focused on problem solving ($p = 0.007$).

Gender differences in coping

Two other studies examined the gender differences in coping among patients with COPD (Frey, 2000; Ninot *et al.,* 2006). Frey examined the differences in coping styles and

coping effectiveness between men and women with COPD who were active in support groups for people with the disease. Ninot *et al.'s* descriptive longitudinal study explored gender differences in coping strategies among patients with mild to moderate COPD who were enrolled in inpatient and multidisciplinary rehabilitation programs. The two studies yielded different findings; Frey stated that no coping differences for use or effectiveness were found to be related to participation in the pulmonary rehabilitation program. On the other hand, Ninot *et al.,* found that men used more *Problem-focused* strategies focused (m = 57.9 ± 11.4 vs. 53.0 ± 9.9) and fewer *Emotion-focused* strategies than women (39.7 ±11.9 vs. 46.2 ± 12.4).

Coping and quality of life

Ibrahim, Taboonpong, and Nilmanat (2009) examined the relationships between coping and quality of life among Indonesians undergoing hemodialysis. The 40-item Jalowiec Coping Scale (Jalowiec, 1987) was used to collect data. This instrument categorizes coping strategies into two main categories; problem-oriented and emotion-oriented. The results showed that the subjects' use of *Emotional-focused* coping and their total quality of life scores were negatively associated ($r = -.27$, $p < 0.05$). No association between *Problem-focused* coping and the quality of life of the subjects was found.

Coping and support groups

Several studies examined the relationship between coping and participation in support groups or rehabilitation programs (Charlton & Barrow, 2002; Frey, 2000; Grande, Myers & Sutton, 2006; Ninot *et al.,* 2006; Siu *et al.,* 2007). Charlton and Barrow stated that Parkinson's disease patients who participated in the self-help group used different

approaches for management of physical conditions such as *Keeping active*, *Using medication*, and *Praying*. For patients who did not participate in the self-help group, coping focused on maintaining a normal life and denying the condition. These findings were supported by Ninot *et al.,* who stated that after participation in the pulmonary rehabilitation program there was an increased reliance on *Problem-focused* coping strategies (+2.54 [95% confidence interval: 1.41–3.67] with F = 23.77, *p* <.0001) and a decrease in *Emotion-focused coping* strategies (-2.75 [95% confidence interval: -4.06, -1.45], F = 15.37, *p* <.001). Furthermore, Grande *et al*. reported that participants of a community cancer support group used more adaptive coping strategies such as *Active coping*, *Planning*, *Reframing*, *Acceptance* and *Emotional and Instrumental support seeking*, than their comparison group. Moreover, participants showed greater personal control over their condition. Additionally, Siu *et al.,* reported that the chronic disease self management group demonstrated a significantly greater increase in the use of *Diverting attention* (F = 6.60, p = .011) and *Ignoring sensation* (F = 8.09, p = .005) than did their comparison group. On the other hand, Frey found no coping differences for use or effectiveness related to participation in the pulmonary rehabilitation program.

Tak and Laffrey (2003) explored the relationships among functional disability, chronic daily stress, coping strategies, beliefs about personal control, social support, and life satisfaction in older women with osteoarthritis. They used a descriptive, correlation research design, using the 40-item Jalowiec Coping scale (Jalowiec *et al.,* 1984). Older women with high levels of stress reported greater use of *Emotion-focused coping* strategies (r = .42, p < .01), had higher external health locus of control (r = .20, p < .05), perceived less social support (r = -.51, p < .01), and were less satisfied with their lives (r = -.48, p <

.01). Frequent use of *Problem- focused* coping strategies was associated with greater perceived social support ($r = .33$, $p < .01$).

Souza-Talarico *et al.,* (2008) investigated stress intensity and coping style in older people with mild Alzheimer's disease. Thirty individuals with mild Alzheimer's disease were compared with 30 cognitively healthy older people. Results showed that *Emotion-focused* coping was predominant in the patients with Alzheimer's disease but not statistically significant ($p = 0.124$). Subjects displaying better cognitive performance in the Alzheimer's disease group had selected coping strategies focused on problem solving ($p = 0.007$).

Qualitative studies of coping

Results of some qualitative studies revealed that older adults with chronic illness wanted to *take an active role in the management* of their illness. The findings of Koch, Jenkin, and Kralik (2004) indicated that older asthmatic patients advocated collaborative and self-agency models for asthma self management; they did not rely on health care professionals taking the lead role in management of their disease. These findings were supported by Loeb et al.'s (2003) study where a major coping strategy that emerged was *Seeking information*. Participants in that study tended to *Seek information to take an active role* in the management of their conditions. Another qualitative study used grounded theory approach to gain deeper understanding of effective coping of a purposive sample of 26 adults with physical disability indicated that patients used *Problem-focused* strategies through engagement in the disability and active efforts to reduce or get out of the problems created by the disability (Persson & Rydén, 2006). Moreover, Hosseini *et al.,* (2010)

identified other strategies such as "*Fighting the disease*", and "*Defending oneself against the disease*".

Many qualitative studies reported that *Social support* and *Social interaction* emerged as coping strategies in many studies. Loeb *et al.,* (2003) labeled it "*Relating with health care providers*" while Charlton and Barrow (2002) described it as "*Social interaction*" and "*Social comparison*" through comparing themselves with other patients with similar disease. Hosseini *et al.,* (2010) and Taleghani *et al.,* (2008) described it as "*Seeking support*". Taleghani et al. identified a specific subset, "*The supportive role of a spouse and relatives*". Similarly, Tak (2006) considered spouses, adult children, clergy, friends, siblings, and other family members a "*Support resources*".

Some studies indicated that *Acceptance* was used by groups of older adults as a coping strategy (Charlton & Barrow 2002; Delmar *et al.,* 2005; Tak 2006). Delmar *et al.,* indicated that *Moving toward acceptance* is a way for getting harmony with self, while Tak described cognitive efforts to cope with stress by "*Seeking peace of mind*". Furthermore, Taleghani *et al.,* (2008) described it as accepting the fact of the disease through *Active acceptance* and *Passive acceptance*. They described it as "*Living with the disease with tolerance*".

Spirituality and/or *relying on religion* were described in some studies as effective coping strategies (Charlton & Barrow, 2002; Hosseini *et al.,* 2010; Loeb *et al.,* 2003; Tak 2006; Taleghani *et al.,* 2006; Taleghani, *et al.,* 2008). Loeb et al. described *Spirituality* and/or *religion* as a distinct theme, that in working through tough times with chronic illness, spirituality and/or religion were valuable coping strategies. Furthermore, Tak concluded that *Praying and having faith in God* was used to cope in stressful situations.

Another qualitative study also explored spiritual coping mechanisms in 15 chronically ill patients. The main themes which emerged were "*Reaching out to God in the belief and Faith that help will be forthcoming*", *"Feeling connected to God through prayer"*, *"Meaning and purpose*", *"Strategy of privacy"*, and "*Connectedness with others*" (Narayanasamy, 2002).

Older adults with chronic illnesses used many other coping strategies such as *Taking medications* (Elliott *et al.,* 2007; Koch, Jenkin, & Kralik, 2004; Loeb *et al.,* 2003; Tak 2006); *Performing diversional activities* (Charlton & Barrow 2002; Loeb *et al.,* 2003; Tak 2006); *Using hope* (Charlton & Barrow 2002; Delmar *et al.,* 2005); *Exercising and Changing dietary patterns* (Loeb et al., 2003); *Expressing emotions* (Hosseini *et al.,* 2010); and *Changing medication-taking behaviors* (Elliott *et al.,* 2007).

The results from qualitative studies have added tremendously to the existing knowledge regarding coping and coping strategies. They enhanced deeper understanding of the coping and coping styles from the perspective of participants themselves, rather than as care providers.

Most of the reviewed studies were carried out in developed countries where the cultural context and the patients' characteristics were greatly different from patients' characteristics in Jordan or other Arab countries. These differences limit the generalization of these findings to Jordanian or Arab patients. Jordan and other Arab countries not only need quantitative studies but also need qualitative studies to form a baseline for the assessment of coping.

Summary

Coping and coping strategies were studied in patients with different chronic conditions. Older adults with different chronic illnesses tended to use a wide range of coping styles and strategies to cope with their illnesses. Many studies reported an *Optimistic* coping style as the most commonly used by subjects with various chronic conditions. Several studies showed that the perceived use of *Confrontive, Optimistic, Palliative,* and *Self-reliant* coping styles was positively correlated with better psychosocial adjustment. Also, use of *Emotion-focused* strategies negatively correlated to quality of life.

The studies that explored gender differences reported contradicting findings; one study showed no gender differences in coping between men and women; another study found that men used more *Problem-focused* strategies focused and fewer *Emotion-focused* strategies than women. Many studies reported that participation support groups were linked to an increased reliance on *Problem-focused* coping strategies. The results of qualitative studies showed that older adult tend to *Seek information to take an active role* in the management of chronic illness. Other themes emerged from qualitative studies were *Social support*, *Acceptance*, and *Spirituality* and/or *Relying on religion.*

Table (2.1)

Studies of coping with chronic illnesses (n= 25)

Author/s / Country	Purpose/s	Population and Sample	Design	Instrument/s	Findings
Ahlström & Wennenberg (2002) Sweden	Describe coping with illness-related problems in persons with muscular diseases and investigate the influence of demographic variables.	44 Muscular dystrophy subjects 32 post polio syndrome subjects, and a comparison group of 214 students. Age range (patients 23-81 years, student 19 -53 years)	Cross-sectional descriptive	Swedish version of the Way of Coping Questionnaire (WCQ) (Lazarus and Folkman, 1984)	*Coping strategy distancing* was used more (t-value 2.94, d.f. 255, $p < 0.01$, and t-value 2.74, d.f. 244, $p < 0.01$, respectively) and the *strategy accepting responsibility* used less (t-value 2.56, d.f. 254, $p < 0.05$, and t-value 2.10, d.f. 242, $p < 0.05$, respectively) frequently in the chronic disease groups. Persons with muscular dystrophy used less problem-focused coping in the form of Confrontive coping (m= 3.75 ± 3.11) and planful problem solving (m= 5.83± 4.14) when compared with the postpolio (Confrontive m= 5.97 ± 4.4; planful problem solving m= 9.23 ± 4.03) and student group (Confrontive m= 6.53 ± 3.63; planful problem solving m= 8.23 ± 3.79). Women in the three groups employed the strategy of seeking social support more often than did men. In the students group the difference was statistically significant (t-value 2.06, d.f. 210, $p < 0.05$).
Andenæs, Kalfoss & Wahl (2006) Norway	Test the prevalence of psychological distress in patients hospitalized for an acute exacerbation COPD, assess how they appraise and cope with the recent stressful event, and examine relationships among coping, appraisal, and psychological distress.	92 patients with COPD. Mean age = 69.1± 8.5 years.	Descriptive, cross-sectional design	Disease severity and demographic characteristics. Appraisal of the most stressful event; the revised Way of Coping questionnaire (WOC) (Lazarus and Folkman, 1984); The Hopkins Symptom Check List-25 (HSCL-25). (Hesbacher et al., 1980)	64.1% were categorized with psychological distress. The most frequently used coping strategy was “concentrating on what to do next,” more so for patients with psychological distress. No significant differences between patients with and without psychological distress with regard to number of coping strategies used. Using problem solving coping strategies *(I talked to someone who could do something about the problem (*phi -.293)*, I drew on my past experiences* (phi -.329)) were inversely related to

Author/s / Country	Purpose/s	Population and Sample	Design	Instrument/s	Findings
					psychological distress. 61% reported stressful events were something they had to accept, 21.7% thought they could change or do something about it, and the remainder needed more information.
Charlton & Barrow (2002) UK	Identify coping methods used to alleviate psychological distress, and to see whether coping methods are related to self-help group membership among patients with Parkinson's disease	Eight patients; (four were members of the Parkinson's Disease Society and four were not). Age (range = 62-86 years). Five women and three men.	Exploratory qualitative	Semi-structured interview	The main ways of coping identified were : -Social interaction, social comparison, living one day at a time, fighting spirit, not thinking about the illness, positive outlook, hope, and acceptance. Non-members in support groups, coping centered upon maintaining a normal life and denying the condition, but for group members, the disease and its likely consequences were accepted and incorporated into everyday life.
Delmar, Bøje-Dylmer, Forup, Jakobsen, Møller, Sønder, & Pedrsen. (2005) Denmark	Explore the meaning to live with a chronic illness	18 patients, aged 18–75 Sample included six patients with 'type I' diabetes, six with colitis ulcerosa and six coronary occlusion patients currently in the rehabilitation phase.	Exploratory qualitative	In-depth interviews	Two main themes emerged to cope with chronic illness; the first one is movement toward acceptance through accoustoming oneself to live with one's new situation and the second theme was through expressing hope in the future.
Downe-Wamboldt, Butler & Coulter (2006) Canada	Explore the relationship between meaning of illness, perceived social support resources, coping strategies used, and quality of life (QOL) by patients with lung cancer.	85 patients with lung cancer and their associated family members. Mean patients' age = 66.3± 8.7 years.	Cross-sectional	The Meaning of Illness Questionnaire (MIQ) (Browne et al., 1992); The Arizona Social Support questionnaire (Barrera, 1980); and The Jalowiec Coping Scale (JCS) (Jalowiec, 1989)	Patients showed high levels of perceived social support. The most used coping styles were; Optimistic (2.4 ± 0.43), self-reliant (1.9 ± 0.67), supportive (1.6 ± 0.73) coping styles. Emotive (0.85 ± 0.58) and evasive (0.96 ± 0.45) coping styles were the least used.

Author/s / Country	Purpose/s	Population and Sample	Design	Instrument/s	Findings
Elliott, Ross-Degnan, Adams, Safran, & Soumarai (2007) USA	To explore how older adults with multiple illnesses make choices about medicines	Purposive sample of 20 patients with multiple chronic illnesses. Twelve males and 8 females. Mean age = 76 years, range (67 – 90) years.	Exploratory qualitative	Semi structured interviews	Themes emerged coping with multiple chronic illnesses 1. Medicine-taking behavior. • Stopping a medicine altogether. • Taking regular breaks. • Discontinuing medicines to check if they are working • Trying individual medicines in a complex new regimen. • Reducing doses. 2. Factors influencing choices between medicines • Symptom control. • Side effects. • Fear of future risk. • Medication cost. • Negative health experience. • Illness beliefs. • Experience of an illness. • Fear of its future effects
Frey (2000) USA	Examine the coping styles and coping effectiveness between men and women with COPD who were active in support groups.	154 patients (men 66, women 88) Mean age 67. 6 ± 9.3 years	Descriptive comparative	Revised Jalowiec Coping Scale (Jalowiec, 1987)	The total group used the Optimistic coping style the most (M, 2.1; SD = 0.57). the Optimistic coping style found to be the most effective (M, 2; SD = 0.61) No statistically significant gender differences existed for overall coping use, overall coping effectiveness, or with the 8 coping subscales No coping differences for use or effectiveness were found to be related to participation in either a pulmonary rehabilitation program or the lung association program.
Grande, Myers & Sutton (2006)	Investigate differences between participants of a community cancer	Sixty-three support group participants and 44 comparison sample	Cross-sectional	The Functional Status and General Health subscales of the European	Community cancer support group respondents used more adaptive coping strategies than the comparison group, specifically, *active coping* (OR

Author/s / Country	Purpose/s	Population and Sample	Design	Instrument/s	Findings
UK	support group and a random selection of non-participants from the Cancer Registry	respondents were recruited. All subjects are patients with cancer with all diagnosis. Median age for the study group was 61 years and for the control group was 64.5 years		Organization for Research and Treatment into Cancer (EORTC) QLQ-C30 (Aaronson et al., 1993, Fayers et al., 2001); The Revised Illness Perception Questionnaire (IPQ-R) ((Moss-Morris et al., 2002); The Brief COPE inventory (Carver, 1997). The hospital anxiety and depression scale (HADS) (Zigmond & Snaith, 1983). The multidimensional scale of perceived social support (MSPSS) (Zimet et al., 1988)	=1.68 (1.31, 2.16) p<0.001), *planning* (OR = 1.46 (1.19, 1.79) p < 0.001) , *reframing*(OR= 1.58 (0.26, 1.98) p<0.001) , *acceptance* (OR =1.31 (1.003, 1.71) p=0.048) and *emotional and instrumental support seeking* (OR =1.27 (1.02, 1.58) p=0.031, OR =1.50 (1.22, 1.84) p<0.001 respectively) . They felt greater personal control over their cancer, but were also generally more distressed over it and more anxious.
Hosseini, Sharif, Ahmadi & Zare (2010) Iran	Identify coping strategies employed by 21 Iranian adults with epilepsy	21 Iranian adults with epilepsy. Age range (18-65 years).	Qualitative	In-depth Semi structured interviews.	Six main coping themes that emerged; *confronting the disease using religious sentiment*, *seeking support*, *fighting the disease*, *defending oneself against the disease*, *concealing the disease, and expressing emotions.* Participants used an emotion-focused approach more often than a problem-focused approach as a coping strategy.
Ibrahim, Taboonpong & Nilmanat (2009) Indonesia	Examine the relationships between coping and the quality of life among Indonesians undergoing hemodialysis	91 patients participated. Age range (23 -73) years, mean = 52.1 years.	Cross sectional, descriptive correlation	The Jalowiec Coping Scale (Jalowiec, 1987), and the World Health Organization Quality of Life-Brief (WHO Quality of Life Group, 1984)	Fifty-two (57.1%) of patients ranked their QOL very poor to fair. A negative association was found between the subjects' affective-oriented coping and their total QOL scores (r= -.26 p < 0.05). No association between problem-solving coping and the QOL of the subjects (*r*= .08).
Koch, Jenkin, and Kralik,	Explore asthma self management models of	Eight men and 16 women with asthma aged more	Qualitative Action	In-depth interviews, an open-ended questionnaire, and two	Three models of asthma self-management emerged:

Author/s / Country	Purpose/s	Population and Sample	Design	Instrument/s	Findings
(2004) Australia	older patients with asthma	than 60 years	research	mixed-gender participatory action research groups.	• Medical • Collaborative • Self-agency
Lindqvist, Carlsson & Sjödén (2004) Sweden	Describe and compare the use and perceived effectiveness of different coping strategies in people after kidney transplant with a matched sample of the general Swedish population.	A consecutive series of 30 patients (10 women, 20 men) and 30 subjects of the general Swedish population. A matched sample,	Descriptive-comparative design	The Jalowiec Coping Scale (JCS) (Jalowiec 1991).	Compared with the general population, the renal transplant sample used significantly more Optimistic ($t = 4{\cdot}456$, d.f. = 29, $P < 0{\cdot}0001$), supportive ($t = 2{\cdot}794$, d.f. = 29, $P < 0{\cdot}5$) self-reliant ($t = 4{\cdot}459$, d.f. = 29, $P < 0{\cdot}0001$) and less Emotive ($t = -7{\cdot}53$, d.f. = 29, $P < 0{\cdot}0001$) coping. The RT sample regarded self-reliant ($t = -2{\cdot}232$, d.f. = 29, $P < 0{\cdot}005$) and confrontative coping ($t = -2{\cdot}705$, d.f. = 29, $P < 0{\cdot}05$) as more effective and Emotive coping ($t = 8{\cdot}196$, d.f. = 29, $P < 0{\cdot}0001$) as less effective than did the general population.
Loeb (2006) USA	Explore strategies used by older adult African Americans to cope with their chronic health conditions	28 African American older adults with multiple chronic conditions. Ages ranged from 55 through 89 (M = 69 years). 69% were females	Qualitative focus group methodology	Impact of chronic conditions, Focused group discussion	Nine categories of coping strategies were found: - dealing with it, engaging in life, exercising, seeking information, relying on God, changing dietary patterns, medicating, self-monitoring, and self-advocacy. Coping strategies used include both problem-oriented and emotional-oriented strategies.
Logan, Pelletier-Hibbert & Hodgins (2006) Canada	Explore the use and perceived helpfulness of coping strategies to manage stressors among haemodialysis patients aged 65 years and older	50 in-hospital haemodialysis patients aged 65 years and older, 22 (44%) women and 28 (56%) men. Mean age was 76.4 (6.43) years.	Descriptive, correlational	The revised Haemodialysis Stressor Scale (HSS) (Bihl et al., 1988); the revised the Jalowiec Coping Scale (JCS-60) (Jalowiec, 1995)	The three coping styles with the highest mean scores for use were Optimistic (2.55 ± 0.27), Supportant (2.42 ± 0.50) and Palliative (2.36 ± 0.47). These coping styles were also reported to be most helpful. The least commonly used styles were Confrontive (2.01 ± 0.41) and Emotive (2.05 ± 60). The three coping strategies rated as being most used and helpful were 'keeping a sense of humor'

Author/s / Country	Purpose/s	Population and Sample	Design	Instrument/s	Findings
					(2.86 ± 0.35), 'look at the good side' (2.64 ± 0.63) and 'think positively' (2.58 ± 0.73). These coping strategies are part of the Optimistic coping style. A negative relationship was observed between stressor intensity and coping helpfulness (*r*= -.31 p = 0.03).
Narayanasamy (2002) UK	Explore spiritual coping mechanisms in chronically ill patients	15 chronically ill patients (10 men and five women) and their ages ranged from 23 to 80 years.	A qualitative methodology	In-depth interviews	The main coping themes that emerged with chronic illness were: - • Reaching out to God in the belief and faith that help will be forthcoming; • Feeling connected to God through prayer; • Meaning and purpose; • Strategy of privacy; • Connectedness with others.
Ninot, Fortes, Poulin, Brun, Desplan, Préfaut & Varray (2006) France	Explore gender differences in coping strategies among patients with mild to moderate COPD who are enrolled in inpatient and multidisciplinary rehabilitation programs.	182 patients with mild to moderate COPD, 61 women with mean age of 60.3 ± 9.7 years and 121 men with mean age of 62.6 ± 9.6 years	Descriptive longitudinal	The Coping Inventory for Stressful Situations (CISS) (Endler and Parker, 1990, 1994).	After pulmonary rehabilitation program there was an increased reliance on problem-focused coping strategies (+2.54 [95% confidence interval: 1.41–3.67] with F = 23.77, *P* <.0001) and a decrease in emotion-focused coping strategies (-2.75 [95% confidence interval: -4.06, -1.45], F = 15.37, *P* <.001). Compared with the men, the women used fewer problem-focused strategies and more emotion-focused strategies. Men and women made opposite changes regarding avoidance strategies: The men decreased and the women increased their reliance on this coping style.
Persson and Rydèn (2006)	Gain a deeper understanding of effective coping in physical disability	purposive sample of 26 adult patients with physical disability and/or chronic	Qualitative (Grounded theory)	In-depth interviews	Two core bipolar concepts emerged, the first was labeled 'Acknowledgement of reality vs. creation of hope' and the second was labeled 'trust in oneself vs. trust in others'. Five other coping

Author/s / Country	Purpose/s	Population and Sample	Design	Instrument/s	Findings
	and/or chronic illness.	illness			strategies were also extracted. These strategies were 'self-trust', problem-reducing actions', 'change of values', 'social trust', and 'minimization".
Siu, Chan , Poon , Chui, and Chan (2007) Hong Kong	Evaluate the 6-week Chronic Disease Self-Management Program (CDSMP) in Hong Kong.	148 subjects with chronic illness, 111 (75%) were female. More than half (58%) of the participants were between 45 and 55 years old.	Quasi-experimental design	Outcome-measurement questionnaire (Lorig et al., 1996); Coping Strategies Questionnaire (CSQ) (Hastie, Riley and Fillingim, 2004; Rosentiel and Keefe, 1983).	Chronic disease self management program (CDSM) group showed a significantly greater increase in the use of diverting attention (F = 6.60, P = .011) and ignoring sensation (F = 8.09, P = .005) than did the comparison group. The use of reinterpreting pain was also higher in the CDSMP group than in the comparison group, and was close to statistical significance (F = 3.19, P = .076).
Souza-Talarico, Chaves, Nitrini & Caramelli (2008) Brazil	Investigate stress intensity and coping styles in older people with mild Alzheimer's disease.	30 cognitively healthy older people and 30 individuals with mild Alzheimer's disease. Age (mean ± SD = 78.9 ± 6.36 years)	Cross-sectional, descriptive correlation study	The mini-mental state examination (MMSE) (Folstein et al. 1975, Brucki et al. 2003), an assessment battery of stress indicators: the Symptom Stress List (SSL) (Ferreira et al. 2002), State-Trait Anxiety Inventory (STAI) (Spielberger 1983), the Cornell Scale of Depression in Dementia (CSDD) (Alexopoulos et al. 1988 a, b); the Jalowiec Coping Scale (JCS) (Jalowiec 1987).	Emotion-oriented coping was predominant in the patients with Alzheimer's disease but not statistically significant (p = 0.124). Subjects displaying better cognitive performance in the Alzheimer's disease group had selected coping strategies focused on problem solving (p = 0.0074).
Tak (2006)	Explore stressors in daily life, coping strategies, and social support resources from the perspective of older adults with arthritis.	Thirteen older adults with arthritis. 9 women and 4 men, age ranged from 60-84 years, mean = 72.8± 7.06 years	Qualitative design with an ethnographic framework	Semi structured interview	Three major coping approaches emerged: cognitive Efforts ("Seeking peace of mind"), diversional activities ("Getting out, doing, or looking"), and assertive actions ("Talking and seeking") Participants seek social support from spouses,

Author/s / Country	Purpose/s	Population and Sample	Design	Instrument/s	Findings
					adult children, clergy, friends, siblings, and other family members.
Tak & Laffrey (2003) USA	Explore the relationships among functional disability, chronic daily stress, coping strategies, beliefs about personal control, social support, and life satisfaction in older women with osteoarthritis	107 women, age ranged in from 60 to 88 years (mean age = 74 (6.70).	Descriptive, correlational design	The Arthritis Impact Measurement Scales (AIMS) (Meenan, 1990; Meenan et al., 1982; Meenan et al., 1980); The Chronic Daily Stress for Elderly Scale (CDSE) scale (Tak and Laffrey 2003); The Jalowiec Coping Scale (Jalowiec, Murphy, & Powers, 1984). Multidimensional Health Locus of Control Scales (Wallston et al., 1983; Wallston & Wallston, 1984); The Personal Resource Questionnaire (PRQ85 (Brandt & Weinert, 1981; Weinert, 1987, 1984); Life Satisfaction Index A (LSI-A) (Adams, 1969).	Stressed elders reported greater use of emotion-focused coping strategies ($r = .42$, $p < .01$), had higher external health locus of control ($r = .20$, $p < .05$), perceived less social support ($r = -.51$, $p < .01$), and were less satisfied with their lives ($r = -.48$, $p < .01$). Frequent use of problem- focused coping strategies was associated with greater perceived social support ($r = .33$, $p < .01$).
Taleghani, Yeketa & Nasrabadi (2006) Iran	Explore how Iranian women coped with newly diagnosed breast cancer	19 women with newly diagnosed breast Cancer. Age range (31 -53) years.	qualitative interviews	In-depth interviews	Coping using a religious approach (acceptance of disease as God's will; spiritual fighting), thinking about the disease (positive thinking: positive suggestion, hope, intentional forgetfulness; negative thinking: hopelessness, fear, impaired body image), accepting the fact of the disease (active acceptance; passive acceptance), social and cultural factors and finally finding support from significant others.
Taleghani, Yeketa, Nasrabadi & Käppeli (2008)	Investigate the adjustment process of women with breast cancer	45 patients and 6 family members. Age of patients ranged from 31 to 56 years	Grounded theory	In-depth interviews with patients and family members and observation	The results showed the following main themes: - perceived threat to life, religious aspects, supportive dimensions, will to recover, increase in endurance, barriers to efforts leading to health, living with the disease with tolerance, tolerance

Author/s / Country	Purpose/s	Population and Sample	Design	Instrument/s	Findings
Iran					facilitators, and tolerance inhibitors.
Westerhuis, Zijlmans, Fischer, Andel & Leijten (2011) Netherland	Explore Coping style and quality of life in patients with epilepsy	105 patients with epilepsy. Age ranged (17 -80) years.	Cross-sectional descriptive comparative	HRQoL was assessed by generic questionnaires: the EQ-5D (Hoeymans, et al., 2005) , the RAND-36 (SF-36) (Aaronson et al., 1998), and the Utrecht Coping List (UCL) (Eriksen et al., 1997; Schreurs et al., 1988)	Patients used mainly Palliative reaction patterns (Men, mean= 17.1 ± 4.3; women mean = 18.1± 3.9), active confronting (Men mean= 17.7 ± 3.8, women mean= 17.6 ± 3.3), and avoidance (Men mean= 17.1 ± 4.5, women mean= 16.5 ± 2.8). When compared to the reference population, avoidance was more prevalent in both male and female patients, and in female patients reassuring thoughts were more prevalent and active confronting less prevalent. Low mental coping style (MCS) is strongly related to a passive coping strategy (r= -.68, p= 0.01).
Yuet, Alexander & Chun (2002) China	Examine the relationships between coping and psychosocial adjustment of Chinese patients with chronic obstructive pulmonary disease (COPD)	Convenience sample of 54 hospitalized COPD adult patients (28 men and 26 women). Mean age = 73.2 ± 10.9 years	Descriptive and correlational design	The Jalowiec Coping Scale (JCS) (Jalowiec, 1987); the Psychosocial Adjustment to Illness Scale-Self Report (PAIS-SR) (Derogatis, 1986), and the Pulmonary Functional Status and Dyspnea Questionnaire (PFSDQ-M) (Lareau et al., 1998).	The most frequently used coping styles were; Fatalistic (Mean= 1.7 ± 0.60), Palliative (Mean= 1.56 ± 0.49), and Supportant (Mean= 1.55 ± 0.50) coping styles. Significant correlations between perceived use of coping strategies and their effectiveness (r= 0.81, p< 0.01). The psychosocial adjustment of the subjects was relatively poor. Negative correlation between the scores for psychosocial adjustment and the subscale scores for the perceived use of Confrontive (r= -0.44, p< 0.01), Optimistic (r= -0.34, p< 0.01), Palliative (r= -0.27, p< 0.05), and self-reliant (r= -0.30, p< 0.05). This indicates that the lower the use of these coping styles the worse the psychosocial adjustment. No significant correlations between psychosocial adjustment domains and evasive, fatalistic, emotive, and supportant coping styles. Negative correlation between the scores for psychosocial adjustment and the subscale scores for the perceived effectiveness of Confrontive (r= -0.38, p< 0.01), and Optimistic (r= -0.25, p< 0.05).

Coping with Cardiac Diseases

This section provides a review of 17 studies that addressed coping with cardiac diseases. Table 4.2 summarizes these studies. Five studies were carried out in Sweden (Brink, Karlson & Hallberg, 2002; Cronqvist *et al.,* 2000; Kristofferzon, Lofmark & Carlsson, 2005a; Kristofferzon, Lofmark & Carlsson , 2005b; Nahlén & Saboonchi, 2010) four in the US (Doering *et al.,* 2004; Jalowiec *et al.,* 2007 ; Klein, Turvey & Pies, 2007; Park *et al.,* 2008); three in the UK (Bogg, Thortton & Bundred, 2000; Cortis & Williams, 2007; Hallas *et al.,* 2011); one in Canada (St-Louis & Robichaud-Ekstrand, 2003); two in Norway (Murberg & Bru, 2001; Ulvik *et al.,* 2008); and one in Taiwan (Tung *et al.,* 2009).. One of these studies was a secondary data analysis (Fox-Wasylyshya, EL-Masri & Krohn, 2007). These studies that addressed coping with cardiac diseases were all done in developed countries. There were no coping with cardiac disease studies found from developing countries including Arab countries and specifically Jordan.

Cardiac disease coping and coping strategies were studied in different populations with various diagnoses, such as heart failure (Cortis & Williams, 2007; Doering *et al.,* 2004; Hallas *et al.,* 2011; Klein, Turvey & Pies, 2007; Murberg & Bru, 2001; Nahlén & Saboonchi, 2010; Park *et al.,* 2008); myocardial infarction (MI) (Brink, Karlson & Hallberg, 2002; Bogg, Thortton & Bundred, 2000; Fox-Wasylyshya, EL-Masri & Krohn, 2007; Kristofferzon, Lofmark & Carlsson, 2005a; Kristofferzon, Lofmark & Carlsson, 2005b); coronary artery bypass graft (CABG) (Tung *et al.,* 2009), atrial fibrillation (St-Louis & Robichaud-Ekstrand, 2003); elective coronary angiography (Ulvik *et al.,* 2008); heart transplant (Jalowiec, Grady & White-Williams, 2007); and percutaneous transluminal coronary angioplasty (PTCA) (Cronqvist *et al.,* 2000).

Different instruments were used to measure coping, such as; the Jalowiec Coping scale (JCS) (Kristofferzon, Lofmark & Carlsson, 2005a; Kristofferzon, Lofmark & Carlsson, 2005b); Coping With Heart Attack Symptoms Questionnaire (Fox-Wasylyshya, EL-Masri & Krohn, 2007); Coping Inventory for Stressful Situations (Bogg *et al.,* Bogg, Thortton & Bundred, 2000); and General Coping Questionnaire (GCQ) (Brink, Karlson & Hallberg, 2002).

Coping strategies and styles

The results of several studies demonstrated that patients with different cardiac diseases used relatively similar coping styles. Kristofferzon, Lofmark & Carlsson (2005a, 2005b) reported that myocardial patients most frequently used an *Optimistic coping style*, followed by *Self-reliant* and *Confrontational styles*. Similar findings were reported by Cronqvist *et al.,* (2000) who stated that in percutaneous transluminal coronary angioplasty (PTCA) patients, the most commonly used coping styles were *Confrontive*, *Optimistic*, and *Self-reliant*. These coping styles were also found to be the most effective. These findings were supported by Jalowiec, Grady, and White-Williams (2007), who explored the predictors of perceived coping effectiveness during the wait for a heart transplant. Findings showed that perceived coping effectiveness ranged from 0.07 to 3.00 out of a possible 3 (M = 1.9, SD = 0.5). The rank order of the perceived effectiveness of the coping styles was as follows: *Optimistic* (25%), *Confrontive* (20%), *Supportant* (14%), *Self-reliant* (13%), *Evasive* (12%), *Palliative* (10%), *Fatalistic* (4%), and *Emotive* (2%). The significant predictors of greater coping effectiveness were *Optimistic* coping, while there was less use of *Emotive, Evasive,* and *Fatalistic* coping. Two studies reported that post CABG patients (Tung *et al.,* 2009) and older people with atrial fibrillation (St-Louis & Robichaud-

Ekstrand, 2003) used more *Problem-focused* coping strategies than *Emotion-focused* coping strategies.

On the other hand, Cortis and Williams (2007) used a qualitative methodology to explore the experiences of older adults with heart failure, to gain a deeper understanding of their Palliative and supportive needs and the value of possible interventions. They found that *Stoicism* and *Acceptance* were the most common themes used to cope with the many problems of heart failure and advancing age. In another study that aimed to compare the coping strategies used by patients with a previous history of AMI and those experiencing their first AMI indicated similar moderate tendencies to cope with symptoms by *Trying to relax* or by *Wishing or praying that the symptoms would go away* (Fox-Wasylyshya, EL-Masri & Krohn, 2007).

Gender differences in coping

Studies that assessed gender difference in coping showed contradicting findings. Kristofferzon, Lofmark, and Carlsson (2005a) reported that women with myocardial infarctions used significantly more *Evasive* and *Supportive* coping compared with men. However, in a follow up study, women scored higher in *Evasive* coping at 4 and 12 months, and there was decreased use of *Fatalistic* coping over time in both men and women (Kristofferzon, Lofmark, & Carlsson, 2005b). Two other studies reported that women used statistically significantly more *Self-blame* coping strategies than did men (St-Louis & Robichaud-Ekstrand, 2003; Tung, *et al.,* 2009). Bogg, Thortton, and Bundred (2000) reported that women used more strategies than men in all coping dimensions measured (*Problem-focused, Emotional, and Avoidance strategies*). Brink, Karlson, and Hallberg (2002) stated that no significant differences were found when testing for gender and coping with myocardial infarction patients five months after discharge.

Coping and quality of life

Some studies that examined the relationship between coping and quality of life found that the use of specific coping styles result in better quality of life. For instance, Klein, Turvey, and Pies (2007) indicated that heart failure severity and maladaptive coping styles such as *Denial*, *Self-distraction*, *Behavioral disengagement*, *Venting of emotions*, and *Self-blame* were negatively associated with quality of life. These findings were supported by Brink et al. (2002), who stated that the strongest correlations between coping and health related quality of life were with the four strategies of *Social trust*, *Fatalism*, *Protest*, and *Minimization. Social trust* and *minimizatio*n were positively correlated with health related quality of life, while *fatalism* and *protest* were negatively correlated with it. On the other hand, Park, et al. (2008) stated that although patients who used *Acceptance*, *Reinterpretation*, and *Religiousness coping styles* experienced an increased *sense of meaning in life.* The use of these types of coping was unrelated to higher levels of quality of life.

Coping and psychosocial adjustment

Several studies examined the relationship between coping and different psychological indicators, such as depression and anxiety. The findings indicated that the use of some adaptive coping styles was correlated with better outcomes. Klein et al. (2007) indicated that heart failure severity and maladaptive coping styles such as *Denial*, *Self-distraction*, *Behavioral disengagement*, *Venting of emotions*, and *Self-blame* were positively associated with depressive symptoms. These findings were supported by Doering *et al.,* (2004) who stated that patients who reported greater use of active behavioral coping demonstrated less fatigue and more strength than patients who reported lower use of that coping style. The *Avoidance coping style* was associated with significantly higher anxiety, anger, depression,

confusion, and fatigue. Furthermore, Nahlén and Saboonchi (2010) reported that *Active coping*, *Positive reframing*, and *Emotional support* correlated significantly with positive affect, while *Venting*, *Behavioral disengagement*, *Substance use*, and *Self-blame* correlated significantly with negative effects. Hallas et al. (2011) found that depressed heart failure patients and patients with high levels of anxiety reported significantly more negative illness perceptions, and maladaptive coping styles, such as *Denial*, *Behavioral disengagement*, and *Venting emotions*. Furthermore, Murberg and Bru's (2001 showed that *Behavioral disengagement* and *lack of Acceptance* were significantly associated with *mortality* among older adults with heart failure.

Summary

The results of several studies demonstrated that patients with different cardiac diseases used relatively similar coping styles. The most frequently used coping styles by patients with cardiac diseases were; *Optimistic, Self-reliant* and *Confrontive coping styles.* Studies that assessed gender difference in coping showed contradicting findings. Two studies showed that women used more *Self-blame* coping strategies than did men, another study reported that women used significantly more *Evasive* and *Supportive* coping than men. Many studies that examined the relationship between coping and quality of life found that the use of specific coping styles resulted in better quality of life. Several studies examined the relationship between coping and different psychological indicators, such as depression and anxiety. The findings indicated that the use of some adaptive coping styles such as *Problem-focused* coping was correlated with better outcomes. On the other hand, *Avoidance, Venting*, *Behavioral disengagement* and *Self-blame* strategies were associated with significantly higher anxiety, anger, depression, confusion, and fatigue.

Table (2.2)

Studies of coping with cardiac diseases (n = 17)

Author/s	Purpose/s	Population and Sample	Design	Instrument/s	Findings
Bogg, Thortton & Bundred (2000) UK	Identify the impact of, variation in psychological response in primary myocardial infarction	220 patients; 37–64 years; mean age = 60 ± 9.9 years 169 men (77%)	Longitudinal descriptive comparative	Hospital Anxiety and Depression Questionnaire (Zigmond &Snaith, 1983); Global Mood Scale (Denollet, 1993); Quality of Life After Myocardial Infarction Questionnaire (Lim et al., 1993); Coping Inventory for Stressful Situations (Endler & Parker 1990)	Women experienced significantly greater emotional difficulties. Women significantly more anxious at all time points (time 1, T= –2.39, time 2, T= –2.46, time 3, T=–2.45, time 4, T=–3.01) and had significantly higher levels of depression at time-points 2 (T= –2.68) and 3 (T= –2.62) Women utilized more strategies than men in all coping dimensions measured (*problem-focused* (*t*=1.92, *P*=0.05) *emotional* (*t*=–2.71, *P*=0.01) *and avoidance* (*t*=–2.66, *P*=0.01) *strategies*)
Brink, Karlson & Hallberg (2002) Sweden	Explore HRQL and coping strategies in first-time myocardial infarction patients five months after discharge	114 cardiac patients (37 women and 77 men). Mean age for men was 65.4 ± 10.1 years, for women 72.2 ± 8.6 years	Longitudinal descriptive comparative	Health Complaints Questionnaire (Karlson *et al*., 1994), Hospital Anxiety and Depression Questionnaire (Zigmond & Snaith, 1983), General Coping Questionnaire (GCQ), Sense of Coherence (SOC) Scale (Antonovsky, 1987): The Short Form 36 (SF-36) (Ware *et al*.,1994).	No gender differences in coping styles or sense of coherence. The most used coping styles were *social trust (Mean= 83 ± 16.1), minimization* (Mean= 77.5 ± 16.1), *problem focused, and self-trust* (73.6 ± 19.8). No significant gender difference in coping. The strongest correlations between coping and HRQL were the four strategies *social trust (r*= 0.20, p< 0.05), *fatalism* (*r*= - 0.42, p< 0.01), *and protest* (*r*= - 0.34, p< 0.01). Fatalism and protest were negatively correlated with physical component scale (PCS) and mental component scale (MCS); higher degrees of fatalism and protest lowered HRQL. *Social trust* had a positive relationship with HRQL and higher degrees of that strategy improved both PCS and MCS.

Author/s	Purpose/s	Population and Sample	Design	Instrument/s	Findings
Cortis and Williams (2007) UK	Explore the experiences of older adults with CHF to gain a deeper understanding of their Palliative and supportive needs and the value of possible interventions.	Ten subjects (5 men and 5 women), age ranged from 80 - 90 years.	Qualitative design	semi-structured interview	Stoicism and acceptance was the most common theme used in dealing with the many problems of chronic disease and advancing age. Participants expressed several reasons for not utilizing the support that may have been available to them such as the desire not to be seen as a burden by relatives and friends, and the feeling that their care and support was more than they could have expected.
Cronqvist, Wredling, Nordlander, Langius, & Björvell (2000) Sweden	Describe the perceived discomfort in relation to percutaneous transluminal coronary angioplasty (PTCA and to investigate coping strategies and styles and sense of coherence before and after PTCA,	56 patients (39 men and 17 women). The reference group included 43 women and 45 men (ages 56–70 years)	Descriptive, correlational study	The PTCA Discomfort Questionnaire (PTCA-DQ) Beattie and Geden ,1990); the Jalowiec Coping Scale (JCS) (Jalowiec ,1991); and the Sense of Coherence Scale (SOC-13) (Antonovsky, 1987).	The most commonly used coping styles were the *confrontative* (Mean= 2.11 ± 0.51), *Optimistic* (Mean 2.09 ± 0.40) and *self-reliant* (Mean= 1.87 ± 0.42) . These coping styles were also found to be the most effective. The least used coping styles were the *Emotive* (Mean= 1.11 ± 0.56), *supportive* (Mean= 1.18 ± 0.52), and *Fatalistic* (Mean= 1.24 ± 0.64). Tried to think positively (Mean = 2.10), Tried to handle things one step at a time (Mean = 2.06), and Tried to keep the situation under control (Mean = 1.88)
Doering, Dracup, Caldwell, Moser, Erickson, Fonarow, & Hamilton (2004) USA	Identify the relationship between three coping styles (active behavioral, active cognitive, and avoidance) and emotional states	84 patients with heart failure, 59 (70.2%) men. Mean age = 54.1± 10.8 years	Cross-sectional design, correlational	Dealing with Illness-R Checklist (Namir et al. 1987), and the Profile of Mood States (McNair et al., 1971)	Greater use of active behavioral coping styles associated with less fatigue and more vigor. The avoidance coping style was associated with significantly higher levels anxiety, anger, depression, confusion, and fatigue.
Fox-Wasylyshya, EL-Masri & Krohn (2007)	Compare the use of coping strategies during an acute cardiac event in patients experiencing a first AMI with those experiencing a recurrent AMI	135 participants. Mean age = 60 ± 13 years.	Secondary data analysis	Coping With Heart Attack Symptoms questionnaire were generated from the Response to Symptoms Questionnaire (McKinley, Moser and Dracup, 2000)	Patients who had a previous AMI were more likely to use prescription medications in response to symptoms than were first time AMI sufferers (Mean = 1.5 ±0.20; median = 2.0, respectively; $p < .001$).

Author/s	Purpose/s	Population and Sample	Design	Instrument/s	Findings
					Patients with no history of AMI were more likely to respond to symptoms by taking nonprescription drugs than were patients with a previous AMI (Mean = 0.90 ± 0.60; median = 1.0, respectively; p = .04). Patients with a previous history of AMI and those experiencing their first AMI indicated similar moderate tendencies to cope with symptoms by *wishing or praying that the symptoms would go away* (Mean= 2.7 ± 1.4, and 2.5 ± 1.7 respectively) or by *trying to relax* (Mean= 2.5 ± 1.3, and 2.4 ± 1.5 respectively).
Hallas, Wray, Andreou and Banner (2011) UK	Identify psychological and clinical variables predicting mood and quality of life for people diagnosed with heart failure (HF).	146 patients (120 (82%) men), mean age 48.6 ± 9.45 years.	Cross-sectional cohort study	Illness Perceptions Questionnaire-Revised (Weinman et al., 1996). Hospital Anxiety and Depression (HADS) (Zigmond and Snaith, 1983). COPE Questionnaire (Carver, Scheier, & Weintraub, 1989) . World Health Organization Quality of Life Brief Assessment (WHOQOL Group, 1998), and Minnesota Living With Heart Failure Questionnaire (Rector, Spencer and Cohn, 1987).	Depressed patients patient with high levels of anxiety reported significantly more negative illness perceptions (Initial Illness Perceptions Questionnaire (IPQ) identity, F= 15.94, P < .001; IPQ timeline cyclical, F= 3.27, P < .05; IPQ consequences, F= 7.95, p < 0.0011; and IPQ personal control, F= 8.22, P < .0001) and maladaptive coping styles (denial, F(= 3.56, P < .05; behavioral disengagement, F = 8.43, P < .0001; and venting emotions, F= 4.61, P < .05) than nondepressed patients.
Jalowiec, Grady & White-Williams (2007) USA	Identify predictors of perceived copingeffectiveness during the wait for a heart transplant.	535 adult HT candidates, men were 83%. Mean age = 52 years (range 18 - 70) years.	Cross sectional descriptive	Revised version of the Jalowiec Coping scale (JCS) (Jalowiec, 2003). HT Symptom Checklist (Jalowiec et al., 1997), HT Stressor Scale (preoperative; Jalowiec	Perceived coping effectiveness ranged from 0.07 to 3.00 out of a possible 3 (M = 1.9, SD = 0.5). Rank order of the perceived effectiveness of the coping styles was as follows: Optimistic (25%), Confrontive (20%), Supportant (14%), self-reliant (13%), evasive (12%), Palliative (10%), Fatalistic (4%), and Emotive (2%).

Author/s	Purpose/s	Population and Sample	Design	Instrument/s	Findings
				et al., 1994), HT Intervention Scale (preoperative; Grady et al., 1993), Rating Question Form (preoperative; Grady et al., 1995), Sickness Impact Profile (Bergner et al., 1976) (modified), Social Support Index (Grady et al., 1995)	The significant predictors of greater coping effectiveness were: less use of Emotive, evasive, and Fatalistic coping, and more use of Optimistic coping. Greater coping effectiveness during the HT wait is correlated with support for family matters and work or financial concerns, and emotional support and greater satisfaction with various social support resources.
Klein, Turvey an Pides (2007) USA	Examines the relationship between coping styles, quality of life, and depressive symptoms in older heart failure patients	80 patients with heart failure (Mean± SD= 68± 7 years).	Descriptive, correlational	The Brief COPE (Carver, 1997); the Kansas City Cardiomyopathy Questionnaire (KCCQ; Green, Porter, Bresnahan, & Spertus, 2000); and the Geriatric Depression Scale (GDS) (Yesavage et al., 1982).	The most frequently used coping strategies were acceptance (M± SD= 6.5± 1.7) followed by religion (M± SD= 5.4± 2.4) and emotional support (M± SD= 5.1± 1.9). The least frequently used coping strategies were Behavioral disengagement (M± SD= 2.5± 1.0), denial (M± SD= 2.8± 1.5), and venting (M± SD= 3.4± 1.7). Significant negative association of quality of life with maladaptive coping styles such as denial (r= -0.30, $p < 0.01$), self-distraction (r= -0.32, $p < 0.01$), behavioral disengagement (r= -0.23, $p < 0.05$), venting of emotions (r= -0.48, $p < 0.001$), and self-blame (r= -0.30, $p < 0.01$). Depressive symptoms were significantly associated with maladaptive coping styles including self-blame (r= .48, $p< 0.001$), venting (r= .45, $p< 0.001$), denial (r= .40, $p< 0.01$), behavioral disengagement (r= .37, $p< 0.01$), and self-distraction (r= .26, $p< 0.05$).
Kristofferzon , Lofmark & Carlsson (2005a) Sweden	Describe and compare coping, social support, and quality of life in Swedish women and men 1 month	75 women and 97 men of Swedish MI patients. Men mean age= 65.9	Cross-sectional and descriptive-comparative	The Jalowiec Coping Scale (Jalowiec, 1991), the Social Network and Social Support Questionnaire (Hanson et al., 1997), the Short Form-36	The most frequently used coping style by both women and men were Optimistic coping (Mean= 1.97 ± 0.53 and 1.88 ± 0.67 respectively) followed by self-reliant (Mean= 1.52 ± 0.68, and 1.50 ± 0.73 respectively) and confrontational (Mean=

Author/s	Purpose/s	Population and Sample	Design	Instrument/s	Findings
	after MI	Women mean age = 65.7		Health Survey (Sullivan et al. 1994), and the Quality of Life Index-Cardiac Version (Ferrans & Powers, 1985, Ferrans, 1990, Ferrans and Powers, 1992) .	1.42 ± 0.59, and 1.40 ± 0.79 respectively) coping styles. The least used by men and women were supportive (Mean= 1.19 ± 0.61 and 0.93 ± 0.55 respectively), Palliative (Mean= 0.89 ± 0.48 and 0.85 ± 0.55 respectively), and Emotive coping (Mean= 0.80 ± 0.49 and 0.71 ± 0.51 respectively). Women used significantly more evasive (t= 2.14, p= 0.03) and supportive (t= 2.97, p= 0.003) coping compared with men.
Kristofferzon , Lofmark & Carlsson (2005b) Sweden	Compare self-rated coping, social support and quality of life women and men 1, 4 and 12 months after MI	75 women and 97 men of Swedish MI patients. Men mean age= 65.9 years Women mean age = 65.7 years	Longitudinal , descriptive and comparative	JCS-60 (Jalowiec 1988, 1991) Social support Questionnaire; Hanson et al. 1997); SF-36 Health Survey (Sullivan et al. 1994, 1997); Quality of Life Index- Cardiac version (Ferrans and Power 1995, 1992, Ferrans 1990)	The most frequently used methods by both women and men at all three assessments were Optimistic, self-reliant and confrontational coping. The least used methods were supportive, Palliative and Emotive coping. There was decrease in the use of Fatalistic coping over time in both groups. Women scored higher in evasive coping at 4 and 12 months More women than men perceived available support from grandchildren and staff of the church. No statistically difference in the quality of life between men and women.
Murberg and Bru (2001) Norway	Evaluate the effects of different coping styles on mortality risk among patients with symptomatic congestive heart failure (CHF)	119 clinically stable patients (71.4% men, mean age 65.7 ± 9.6 years)	Longitudinal , descriptive	Six subscales from the COPE dispositional inventory (Carver, Scheier, & Weintraub, 1989); Functional status (Massie & Conway, 1987).	Behavioral disengagement was a significant predictor of mortality with a hazard ratio of 1.64 ($p \leq .049$), whereas acceptance of the CHF condition showed a marginally significant association with mortality (hazard ratio .64; $p \leq .09$). Results from the Cox regression analyses showed that behavioral disengagement and lack of acceptance were significantly associated with mortality

Author/s	Purpose/s	Population and Sample	Design	Instrument/s	Findings
Nahlén & Saboonchi (2010) Sweden	Investigate factors that may relate to the coping strategies used by individuals with chronic heart failure and how the coping strategies are associated with positive and negative affect	N = 80 Age (mean ±S.D.) 72.1±10.5 (range 39–90) Sex Male 58 (72.5) Female 22 (27.5)	Cross-sectional research design was used	Sense of Coherence scale (Antonovsky, 1987); Brief COPE (Carver, 1997) and Positive Affect Negative Affect Schedule (Watson et al., 1988)	Men had a significantly higher mean rank score for substance use than women did (Mann–Whitney U=428.5, p<0.01). No significant correlations between age and any of the coping strategies with the exception of substance use which showed a negative significant correlation with age (*r*=−0.35, p<0.01). Significant negative correlations were found between total score of SOC and venting, *r*=−0.35, p<0.01, and with self-blame, *r*=−0.40, p<0.01 Active coping, positive reframing, and emotional support correlated significantly with positive affect. Venting, behavioral disengagement, substance use and self-blame correlated significantly with negative affect.
Park, Malone, Suresh, Bliss, & Rosen (2008) USA	Investigate (1) whether particular coping strategies used to deal with congestive heart failure (CHF) are related to meaning in life across time, and (2) whether meaning in life mediates the effect of coping on health-related quality of life.	191 men and 11 women patients. Mean age of participants was 65.6 years (range = 44–85)	Longitudinal cross-sectional study	Demographics and background information, Severity of CHF, Perceived Personal Meaning Scale (Wong, 1998); the COPE questionnaire (Carver et al., 1989); Short Form (SF-36) health status questionnaire (Ware et al., 1994; Ware et al., 1993)	Patients who used acceptance, reinterpretation, and religiousness coping styles experienced increased sense of meaning in life. The use of these types of coping were unrelated to higher levels of quality of life
St-Louis and Robichaud-Ekstrand (2003) Canada	Examine the knowledge level and the coping strategies of older persons with atrial fibrillation, who were on oral anticoagulant therapy.	One hundred subjects participated to the present study. The mean age was 74.04 ± 5.2 years. Fifty-eight	Descriptive and correlational	French version of the Jalowiec Coping Scale (Jalowiec, 1984).	Problem- oriented coping strategies were most often used (32.62%) compared to affective-oriented coping strategies (18.96%). The only statistically significant coping strategies differentiated the subjects regarding their level of anticoagulant effectiveness was “praying and putting one’s trust in God” (P=0.05).

Author/s	Purpose/s	Population and Sample	Design	Instrument/s	Findings
		percent of participants were men.			
Tung, Hunter, Wei & Chang (2009) Taiwan	Investigate gender differences in coping strategies and anxiety in patients after CABG in Taiwan and explore the effect of demographics and role function on coping strategies and anxiety.	Purposive sample of 100 patients post-CABG (50 men and 50 women). Age > 60 years	Cross-sectional survey research design	Revised Ways of Coping Checklist (RWCC) (Vitaliano et al, 1987)and State Trait Anxiety Inventory (STAI) (Frank-Stromborg and Olsen, 2004) .	No differences in coping and anxiety across gender, age, post-operation time, educational level, or marital status. Post-CABG patients used more problem-focused coping (problem focused and seeking help) behaviors (mean = 29.1) than emotion-focused coping strategies (Wishful and avoidance) (mean = 24.2). Women used statistically significantly more self-blame coping strategies than did men. Use of problem-focused coping was negatively related to state and trait anxiety level (r =.33, $P < .01$; r =.30, $P < .01$), emotion-focused coping was positively associated with state anxiety (r = .32, $P < .01$).
Ulvik, Nygård, Hanestad, Wentzel-Larsen & Wahl (2008) Norway	Investigate relationships between disease severity and both mental and physical dimensions of HRQOL in patients admitted for elective coronary angiography.	753 patients (74% men), mean age 62 years, referred for elective cardiac catheterizations	Cross-sectional correlational	The Seattle Angina Questionnaire (SAQ) (Spertus , et al., 1995); anxiety and depression (Zigmond and Snaith, 1983); The Norwegian version of the Revised Jalowiec Coping Scale-60 (Wahl et al., 1999); Perceived Disease Burden (Holmen and Midthjell, 1990)	Less perceived burden and better overall QOL were observed in patients using more confronting coping strategy. There was a significant, but rather weak, relationship between anxiety and more use of Confrontive coping (coefficient: 1.32, $p < 0.001$), normalizing Optimistic (coefficient: 0.79, $p = 0.002$) and combined Emotive coping (coefficient: 1.75, $p < 0.001$). The use of Confrontive coping strategies was related to less perceived burden and better overall QOL.

Coping with Diabetes Mellitus

This section presents review of 13 studies that addressed coping with diabetes mellitus (DM). Four studies were done in the US (Degazon & Parker, 2007; Samuel-Hodge *et al.,* 2008; Willoughby *et al.,* 2000a; Willoughby, Kee & Demi, 2000b); two in Sweden (Gåfvels & Wändell, 2006; Gåfvels & Wändell, 2007); one in China (Zhang *et al.,* 2009); one in Portugal (Coelho, Amorim & Prata, 2003) ; one in the UK (Searle *et al.,* 2007); one in Turkey (Tuncay *et al.,* 2008); one in India (Sridhar *et al.,* 2007); and one in Japan (Yamakawa & Makimoto, 2008) (Table 2.3).

The population of most of the reviewed studies were people with type 2 diabetes mellitus (Coelho, Amorim & Prata, 2003; Degazon & Parker, 2007; Gåfvels & Wändell, 2006; Gåfvels & Wändell, 2007; Samuel-Hodge *et al.,* 2008; Searle *et al.,* 2007; Sridhar *et al.,* 2007; Willoughby *et al.,* 2000a; Willoughby, Kee & Demi, 2000b; Yamakawa & Makimoto, 2008; Zhang *et al.,* 2009). Two studies evaluated women with diabetes, but not men (Willoughby *et al.,* 2000a; Willoughby, Kee & Demi, 2000b).

Coping strategies and styles

Several studies aimed to explore the most frequently and effectively used coping styles by people with diabetes. In a sample of Turkish people with type 1 and type 2 diabetes mellitus, Tuncay *et al.,* (2008) stated that most patients used *Problem-focused* coping strategies such as, *Acceptance* (7.22 ± 1.07), *Religion* (7.07 ± 1.31), *Planning* (6.77 ± 1.07), *Positive reframing* (6.55 ± 1.25), *Using instrumental support* (6.47 ± 1.62), and *Active coping* (6.15 ± 1.61). Furthermore, the most used *Emotional-focused* coping strategies were *Self-distraction* (6.36 ± 1.43) and *Venting* (5.35 ± 1.20). Patients used both

Problem-focused and *Emotional-focused* strategies. These findings were supported by Searle *et al.* (2007) who reported that a combination of *Problem- focused* and *Emotional-focused* coping styles were used rather than a single strategy. The *Confrontive coping* style was the most commonly used (Searle *et al.* 2007). Two other studies reported that the most frequently and effectively used coping styles by women with diabetes were *Optimistic*, *Confrontive*, *Self-reliant*, *Supportant* and *Palliative* styles, while the least effectively used coping styles were the *Emotive* and *Evasive* styles (Willoughby *et al.,* 2000a; Willoughby, Kee, & Demi, 2000b).

Some studies reported contradicting findings. Coelho, Amorim, and Prata (2003) stated that a greater proportion of diabetic patients used *Avoidance* coping styles rather than using *Active confrontation* coping styles. Samuel-Hodge *et al.* (2008) indicated that the most frequently used coping methods by diabetic patients were *Passive forms of coping*, followed by *Emotive* and *Active styles*. Gåfvels and Wändell (2007) revealed that foreign born men scored lower median scores on *social trust* than Swedish born men. Furthermore, foreign born men had higher median scores on the total score for distress, i.e. *Fatalism*, *Resignation*, *Protest*, *Isolation*, and *Intrusion*.

Coelho et al. (2003) reported that more patients regarded diabetes and the consequent lifestyle changes as a threat (42.3%), rather than as a challenge (26.8%). Some people perceived chronic illness as a challenge and living with it being a positive experience. Yamakawa and Makimoto’s (2008) qualitative study explored the existence of positive experiences in people with type 2 diabetes. Face-to-face interviews were used to collect data from Japanese patients. All the participants expressed a positive experience in coping with diabetes. Three main categories emerged from this study “*Positive appraisal*”, “*Diversion*”, and “*Bonding*”.

Coping and health outcomes

Several studies linked the use of some forms of coping with health outcomes. Degazon and Parker (2007) determined that *Confrontive* coping was associated with a positive health care orientation to type 2 diabetes, decreased difficulties in family environment, and decreased disruptions in family relations. Conversely, *Emotive coping* was associated with a negative health care orientation, increased difficulties in family environment, and increased disruptions in family relations. Similarly, Duangdao and Roesch (2008) indicated that use of *Approach* and *Problem-focused* coping was associated with better overall adjustment. Better adjustment also was positively associated to the frequent use of *Confrontive* coping styles, while frequent use of *Evasive* and *Emotive* coping were associated with more illness adjustment problems (Willoughby *et al.,* 2000a; Willoughby, Kee & Demi, 2000b) and worse quality of life (Coelho, Amorim & Prata, 2003). Participants who reported frequent use of *Emotive coping* perceived more problem areas in diabetes, and negative appraisals of diabetes control (Samuel-Hodge *et al.,* 2008). Searle *et al.,* (2007) indicated that *Confrontive* coping was positively associated with positive perceived consequences. These studies showed that active forms of coping such as *Confrontive* and *Problem-focused* coping styles are associated with better adjustment, while passive forms of coping such as *Evasive* and *Emotive* coping are linked with more illness adjustment problems.

Coping and psychosocial adjustment

Several studies explored the relationship between the use of specific coping styles and different psychological indices, such as the *level of stress*, *anxiety*, and *depression*. Zhang *et al.,* (2009) indicated that the use of a *Negative coping style* significantly increased

the level of both anxiety and depressive symptoms, whereas, an *Active coping style* and an *Avoidant coping style* decreased the risk of depressive symptoms. Also the interactions of a *Negative coping style* with *Worrying about decline in body/ physical function* and *reduced economic condition* significantly increased the risk of anxiety and depressive symptoms. Tuncay *et al.,* (2008) reported that *Problem- focused* coping strategies such as *Acceptance*; *Religion*, *Positive reframing*, and *Emotional support* were negatively related to anxiety.

They also reported anxiety was correlated with *Venting* and *Self-distraction* as *Emotion-focused* coping strategies. The findings of these studies were supported by Duangdao and Roesch (2008) who stated that negative relationships were found between *Emotion-focused coping* and specific indices of psychological adjustment such as anxiety and depression.

Gender differences in coping

The studies that examined gender differences in coping with diabetes reported contradicting findings. Sridhar *et al.,* (2007) stated that Indian men had better adjustment with diabetes, coped better, integrated better, and had better quality of life and well-being than women did. However, Degazon, and Parker (2007) indicated that women used significantly more *Palliative* coping strategies and total coping efforts than did men. Gåfvels & Wändell (2006) stated that Swedish women more often used negative coping strategies such as *Resignation*, *Protest*, and *Isolation*. Conversely, Gåfvels and Wändell (2007) found that foreign-born men showed a higher median rating only on *Protest* coping style than did foreign-born women. Coelho, Amorim and Prata (2003) reported that men had significantly higher scores than women for the coping style of *Seeking alternative*

rewards ($p<0.02$). Furthermore, one study stated that there were no significant gender differences in coping styles (Samuel-Hodge *et al.*, 2008).

Summary

Several studies showed that DM patients used a combination of *Problem-focused* and *Emotional-focused* coping strategies. Some studies reported that *Optimistic*, *Confrontive*, and *Self-reliant* were the most commonly used and effective coping styles, while the least effectively used coping styles were the *Emotive* and *Evasive* styles. Several studies reported contradicting findings when they indicated that diabetic patients most commonly used *Passive forms of coping* such as *Avoidance and Emotive* coping strategies. Several studies linked the use of some forms of coping with health outcomes. *Confrontive*, approach and *Problem-focused* coping were associated with better health outcomes, positive perceived consequences and adjustment, whereas *Evasive* and *Emotive* coping were associated with more illness adjustment problems. Many studies reported that use of *Emotion-focused* coping strategies was associated with anxiety and depression. The studies that examined gender differences in coping with diabetes reported contradicting findings; some studies reported that women used more negative coping such as; *Resignation*, *Protest*, and *Isolation* than men. One study reported no significant gender differences in coping styles.

Table (2.3)

Studies of coping with diabetes mellitus (DM) (n= 13)

Author/s	Purpose/s	Population and Sample	Design	Instrument/s	Findings
Coelho, Amorim & Prata (2003) Portugal	Examine the relationship between coping style and perceived quality of life in Portuguese patients with non-insulin-dependent diabetes mellitus	123 patients with non-insulin dependent diabetes mellitus and 124 individuals who had a health care visit as a control group. The diabetic patients had a mean age of 61.9 ± 10.6 years, and 52.0% were women. The mean age of the comparison group was 60.2 ± 11.2 years and 53.2% of the comparison group were women.	Descriptive correlational	The Nottingham Health (Hunt, McEwen and McKenna, 1985), and Coping Responses Inventory—Adult Form (Moos 1993).	The majority of these individuals (72%) had a chronic disease other than diabetes. More patients in this study regarded diabetes and the consequent lifestyle changes as a threat (42.3%) than as a challenge (26.8%). Male patients had significantly higher scores than female patients for the coping style of seeking alternative rewards ($p<0.02$). A greater proportion of diabetic patients used avoidance coping styles, which overall were related to worse quality of life, than used active confrontation coping styles. Coping style was significantly correlated with several dimensions of quality of life in diabetic patients
Degazon & Parker (2007) USA	Test the relationship of coping and psychosocial adaptation to Type 2 diabetes among older Blacks born in the Southern US or the Caribbean and living in urban areas in the Northeast US.	A convenience sample of 212 Blacks. With mean age of 69.6 years (SD 6.8), (Men 70, women 142)	Cross sectional descriptive correlational	the Jalowiec Coping Scale (JCS, Jalowiec, 1988). Psychosocial Adjustment to Illness Scale-Self Report (PAIS-SR, (Derogatis & Derogatis, 1990)	Confrontive coping was associated with a positive health care orientation to Type 2 diabetes, decreased difficulties in family environment and decreased disruptions in family relations; Emotive coping was associated with a negative health care orientation, increased difficulties in family environment and increased disruptions in family relations. Women used significantly more Palliative coping strategies and total coping effort than did men. Blacks from Haiti used more Confrontive coping than those from Trinidad and Tobago
Duangdao and Roesch (2008)	A meta-analysis was performed to summarize the relations between coping dimensions (i.e., avoidance,	21 primary studies consisting of 3,381 people with diabetes	Meta-analysis		Use of approach and problem-focused coping was associated with better overall adjustment. Avoidance and emotion-focused coping were not significantly related to overall adjustment. negative effect sizes medium-to-large in magnitude

Author/s	Purpose/s	Population and Sample	Design	Instrument/s	Findings
	approach, emotion-focused, and problem-focused) and indices of adjustment (i.e., overall, depression, anxiety, glycemic control) in individuals with diabetes.				were found between emotion-focused coping and specific indices of adjustment (anxiety, depression).
Gåfvels & Wändell (2006) Sweden	Assess and compare coping strategies in men and women with type 2 diabetes, and their relationship to medical and socioeconomic circumstances.	121 Swedish-born men and 111 Swedish-born women. Mean age (men = 56.3 ± 6.0 years, women = 54.9 ± 7.0 years)	Descriptive comparative	Swedish self report questionnaire developed to measure cognitive, emotional and action-oriented coping (Siosteen et al., 2005)	Women showed higher values than men on three of the coping scales, i.e. resignation ($p= 0.04$), protest ($p= 0.03$), and isolation ($p= 0.04$). Women more often used negative coping strategies according to the model, i.e. resignation, protest, and isolation.
Gåfvels & Wändell, (2007) Sweden	Assess coping strategies of foreign-born men and women with type 2 diabetes in relation to demographic, medical, and socio-economic situation, and as compared with Swedish-born patients.	Foreign-born patients consisted of 77 subjects, 41 men and 36 women. compared with 232 Swedish-born subjects, 121men and 111women. Age range (34 – 64) years	Descriptive comparative	General Coping Questionnaire (GCQ)) (Lazarus and Folkman, 1984)	Foreign born men had lower median scores on social trust than Sweden born men (47 versus 73; $p= 0.05$). They had higher median scores on the total score for distress (41 versus 16; $p< 0.0001$), fatalism (30 versus 20; $p= 0.01$), resignation (32.5 versus 10; $p< 0.001$), protest (44 versus 12; $p< 0.001$), isolation (27 versus 4; $p= 0.0001$) and intrusion (47.5 versus 15; $p<0.001$). Foreign-born men as compared to foreign-born women showed a higher median rating only on protest (mean= 44 versus 24; $p = 0.0305$).
Samuel-Hodge, Watkins, Rowell & Hooten (2008) USA	Describe how coping styles among African Americans with type 2 diabetes relate to diabetes appraisals, self-care behaviors, and health relate quality of life or well-being.	185 African Americans with type 2 diabetes. Mean age 58.9 ± 12.2	Cross-sectional descriptive	A 31-item adaptation of the Jalowiec coping scale (Jalowiec and Murphy, 1984). The Perceived Stress Scale (PSS) (Cohen, Kamarck & Mermelstein, 1983). Diabetes and general health status (Elasy et al., 2000),	The most frequently used coping methods were passive forms of coping, followed by Emotive and active styles. No significant gender differences in coping styles were found. Subjects who reported frequent use of Emotive coping perceived greater levels of stress ($r= .62$; $p< 0.0001$), more problem areas in diabetes ($r= .42$; $p< 0.0001$), and negative appraisals of diabetes control

Author/s	Purpose/s	Population and Sample	Design	Instrument/s	Findings
				Perceived Diabetes and Dietary Competence (PDDC) (Samuel-Hodge et al., 2002), Problem Areas In Diabetes (PAID) survey (Polonsky et al., 1995) Diabetes self-efficacy survey Spirituality and church involvement (Ammerman et al., 2002).	(*r*= -.20; p< 0.01),
Searle, Norman, Thompson & Vedhara (2007) UK	Examine the relationships between illness representations and the relative importance of coping cognitions and coping behaviors in the context of the management of type 2 diabetes	184 patients with type 2 DM (Men 97, women 67). Age range (32 – 86) years	Prospective design	Revised Illness Perceptions Questionnaire (IPQ-R; Moss-Morris et al., 2002). Personal Models of Diabetes Interview (PMDI; Hampson et al., 1995). The Food Frequency Questionnaire (HEA 3; Little et al., 1999; Little et al., 2000). the Baecke Habitual Physical Activity Questionnaire (Baecke, Burema, & Frijters, 1982). Medication Adherence Report Scale. the Medical Modes of Coping Questionnaire (MCMQ: Fiefel, Strack, & Nagy, 1987).	Confrontational coping style (mean= 16.6 ± 3.5) was the most commonly used. Confrontational coping and avoidance coping were strongly correlated (*r*= .29, p< 0.01) as were acceptance coping and avoidance (*r*= .49, p< 0.01). Combination of problem focused and emotional focused coping styles were used rather one strategy. Confrontation coping was positively associated with perceived consequences (*r*= .33, p< 0.01).
Sridhar, Madhu, Veena, Madhavi, Sangeetha & Rani (2007)	Evaluate support and parameters of psychological aspects of adults with diabetes in India.	182 patients (106 men, 76 women). Mean age = 50.4 ± 11.3 years.	Longitudinal	Diabetes quality of life questionnaire (DQOL) (Jacobson, 1994) . The well-being questionnaire (Bradley,	Compared to women men had better adjustment with disease, coped better (mean 32.65 ± 2.59 versus 31.93 ± 2.63, t= 1.982 p< 0.05), integrated better (mean= 57.11 ± 7.23 versus 55.51 ± 7.39; t = 2.30, p < .05) had better quality of life (mean= 78.58 ± 6.89 versus 75.96 ± 7.70; t = 2.81,p < .01).and well-being (mean=

Author/s	Purpose/s	Population and Sample	Design	Instrument/s	Findings
India				1994). psychological adjustment to diabetes questionnaire (Welch, Dunn & Beeney, 1994). Barriers to self-care (Glasgow, 1994). Perceived social support (Sridhar and Madhu, 2002)	36.79 ± 6.29 versus 35.24 ± 5.64; t = 1.99,p < .05).
Tuncay, Musabak, Gok & Kutlu (2008) Turkey	Examine diabetes-related coping strategies and their relationship to anxiety and sociodemographic characteristics of patients with type I and II diabetes	One hundred and sixty-one (161) patients (98 women, 63 men). Age range (20 – 60) years	Descriptive correlational	The trait anxiety scale (Spielberger et al., 1983) , the brief COPE(Carver, 1997),	The most used problem-focused coping strategies in both type I and type II diabetes were : acceptance (7.22 ± 1.07), religion (7.07 ± 1.31), planning (6.77 ± 1.07), positive reframing (6.55 ± 1.25), using instrumental support (6.47 ± 1.62), active coping (6.15 ± 1.61), and using emotional support (5.94 ± 1.64). The most used emotional coping strategies were self-distraction (6.36 ± 1.43) and venting (5.35 ± 1.20). Males had higher levels of anxiety than females. Problem focused coping strategies such as acceptance, religion, positive reframing, and emotional support were negatively related to anxiety. Anxiety was negatively correlated with venting and self-distraction as emotion-focused coping strategies.
Willoughby, Kee, Demi and Parker (2000a) USA	Investigate the relationships between coping styles and psychosocial adjustment of women with diabetes	115 community –residing women with diabetes. Age range (22- 70) years, mean = 48.0 ± 11.4	Descriptive correlational	Revised Jalowiec coping scale and Psychosocial Adjustment to Illness Scale (Derogatis & Derogatis 1990)	The most frequently and effectively used coping styles were Optimistic (mean= 2.28 ± 0.43), confrontative (mean= 2.09 ± 0.54), self-reliant (mean= 2.07 ± 0.48), and Supportant (mean= 1.80 ± 0.51). These coping styles were linked to better adjustment. patients, evasive and Emotive coping were associated with more illness adjustment problems
Willoughby, Kee & Demi (2000b) USA	Examine the extent to which social support, personal resources, coping styles, and psychosocial	115 diabetic women with DM. Age range (22- 70) years, mean = 48.0 ± 11.4	Descriptive, correlational survey design	Part two of Weinert's (1988) Personal Resources Questionnaire (PRQ); The Revised Jalowiec Coping Scale	Women reported having high levels of social support (mean= 135 ± 22, range 25-175) and personal resources (mean= 83 ± 15, range 20-100). The most frequently used coping styles were Optimistic, Confrontive, self-reliant and Supportant.

Author/s	Purpose/s	Population and Sample	Design	Instrument/s	Findings
	adjustment to illness differ among women with diabetes living in different types of household structure and to explore the influence of social support, personal resources, coping styles, and household structure on the psychosocial adjustment of women with diabetes			Coping, The Psychosocial Adjustment to Illness Scale Self-Report (PAIS-SR) (Derogatis & Derogatis 1990)	The most effective coping styles were Supportant, Optimistic, Confrontive, Self-reliant, and Palliative. The least effectively used styles were the Emotive and evasive coping styles. More frequent use of Confrontive coping was associated with better adjustment (r= -.20, $p < 0.05$). Greater social support, more adequate personal resources, and more effective coping are associated with better adjustment.
Yamakawa & Makimoto (2008) Japan	Explore the existence of positive experiences in people with type 2 diabetes.	17 patients, age range from 50- 78 years old	An exploratory qualitative design	Face-to-face interviews	Three main coping categories emerged from this study: 'Positive appraisal", diversion", and bonding'.
Zhang, Tse, Ye, Lin, Chen & Chen (2009) China	Examine the major and interactive effects of psychological stress and coping styles on anxiety and depressive symptoms in Chinese patients with Type 2 diabetes.	304 patients with type 2 DM, The Mean ± SD) age of the participants was 59.4 ± 13.7 years with a male-to-female ratio of 1 : 1.5	Descriptive correlational	Psychological stress scale(Leung et al., 1999); The Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith, 1983); 24 items validated coping scale (Shen and Jiang, 2000)	'Negative coping style' significantly increased the level of both anxiety and depressive symptoms; whereas, 'active coping style' and 'avoidant coping style' decreased the risk of depressive symptoms. The interactions of 'negative coping style' with 'worrying about decline in body⁄ physical function' and 'reduced economic condition' significantly increased the risk of anxiety and depressive symptoms, and the interaction of 'social ⁄ family crisis caused by the disease' with 'avoidance coping style' and 'worrying about decline in body ⁄ physical function' with 'active coping style' significantly decreased the risk of depressive symptoms.

Assessment of Coping

Different instruments were used to measure coping. Some studies used the revised Jalowiec Coping scale (JCS) or adaptations of this instrument (Frey, 2000; Ibrahim, Taboonpong, & Nilmanat, 2009; Lindqvist, Carlsson & Sjödén, 2004; Logan, Pelletier-Hibbert & Hodgins, 2006; Samuel-Hodge, Watkins, Rowell & Hooten, 2008; Willoughby *et al.,* 2000a; Willoughby, Kee & Demi, 2000b; Yuet, Alexander, & Chun, 2002). Other instruments used included a 24 items validated coping scale (Zhang *et al.,* 2009), a Swedish self-report questionnaire developed to measure cognitive, emotional and action-oriented coping (Gåfvels & Wändell, 2006), General Coping Questionnaire (GCQ) (Gåfvels & Wändell, 2007), Coping Responses Inventory-Adult Form (Coelho, Amorim & Prata, 2003), the brief COPE questionnaire (Tuncay *et al.,* 2008), psychological adjustment to diabetes questionnaire (Degazon & Parker, 2007), and the Medical Modes of Coping Questionnaire (MMCQ) (Searle *et al.,* 2007). Arab researchers can benefit from the availability of different instruments to measure coping; it will provide them with diverse options to choose from. Using these instruments will help Arab researchers to determine the appropriateness for Arab subjects. Additionally, they can assess the predictive validity of these instruments through using more than one instrument in the same study.

Summary of the Review of the Literature

The use and effectiveness of coping approaches people use when they face chronic illnesses has received great attention from researchers in different countries, especially in developed countries for a variety of chronic illnesses. Unfortunately, the researcher did not find any published studies conducted in Jordan or other Arab countries.

Both quantitative and qualitative methods identified and explored effective methods of coping. Most of the quantitative studies used a cross sectional design. Most used convenience samples. There was a lack of longitudinal studies, which would study coping strategies over long periods of time.

The review of quantitative studies that addressed coping with chronic illness revealed that there was no universal pattern of coping strategies among older adult patients who suffer from chronic illnesses or disabilities. Different coping instruments have been used in different studies, making it difficult to compare the results in a completely comparative manner. However, some coping styles and strategies were linked with better outcomes, such as better quality of life, better psychosocial functioning, decreased level of anxiety, and depression. The studies that examined gender differences in coping with chronic illness reported contradicting findings.

Different instruments, along with qualitative studies, were used to measure coping,

Studies in the literature review revealed that older adults with different chronic illnesses tend to use a wide range of coping styles and strategies to cope with their illnesses. *Optimistic coping style* was reported as either the most commonly used or one of the three most used coping styles. Moreover, the findings showed that patients tend to use *Problem-focused* coping styles such as *Self-reliant,* which are actively addressing the chronic illness. The least commonly used coping styles were *Emotive* and *Evasive.* Several studies reported that the most commonly used coping styles were also the most *effective*.

The results of the qualitative studies revewied by the researcher revealed different themes that provide deeper understanding of the coping approaches used by older adult patients to cope with their illnesses. Several qualitative studies revealed that older adults with chronic illnesses wanted to take an active role in the management of their illness. Other studies showed that patients tend to use different coping styles and strategies such as; *Social support* and *Spirituality* and/or *Relying on religion*

The majority of the studies that examined the relationship between coping and participation in support groups or rehabilitation programs indicated that patients who participated in these programs tended to adopt *Problem-focused* coping styles.

Studies that examined the relationship between coping and different psychological indicators, such as depression and anxiety, found that the use of some adaptive coping styles that include *Problem-focused* strategies was associated with better health outcomes.

Studies that assessed gender differences in coping showed a wide range of findings. Few studies concluded there were no significant gender differences in coping styles between men and women. Other studies reported that men used more *Problem-focused* strategies and fewer *Emotion-focused* strategies than women; had better adjustment with diabetes, coped better, integrated better, and had better quality of life and well-being than women; men showed a higher median rating on *Protest* coping style than did women, and men had significantly higher scores than women for the coping style of *Seeking alternative rewards.* On the other hand, other studies reported that women used significantly more *Evasive* and *Supportive* coping compared with men; used statistically significantly more *Self-blame* coping strategies; used more *Evasive* coping; used more *Problem-focused, Emotional and Avoidance coping strategies* used significantly more *Palliative* coping strategies and total coping efforts; and more often used negative coping strategies such as *Resignation*, *Protest*, and *Isolation* than men.

In conclusion most of the reviewed studies were carried out in developed countries which might hinder the generalization of the findings of these studies to Jordanian older adult patients due to differences in patients' characteristics. Moreover, most of the studies in the literature examined coping with one chronic illness. There is a need to assess how older adults cope with chronic illness in the context of Arab culture.

Chapter Three

Research Methodology

This chapter discusses the methods and procedures that were used in answering the research questions. This section starts with a discussion of the design, the setting, the population and sample, ethical consideration, data collection procedures, instrumentation, reliability and validity of the instruments, the translation process of the research instruments and the last section provides a description of the method of data analysis.

Design

A cross-sectional descriptive design was used for this study. Cross-sectional designs are appropriate for studying the status of phenomena or for describing relationships among phenomena at a fixed point in time (Polit & Beck, 2004).The rationale for using this design was its suitability for describing a phenomenon not previously explored in Jordan. By using this design, large amounts of data can be collected. Therefore, this design was chosen for its practicality in answering the research questions.

Setting

This study was conducted in the King Hussein Medical Center (KHMC) in Amman. Since KHMC is one of the largest hospital complex in Jordan with an 1150 bed capacity (RMS Annual Statistical Report, 2009) it was chosen as the data collection site. In this center there are many outpatient clinics that treat older adults with chronic illnesses, such as, cardiovascular, endocrine, respiratory, urology, and rheumatology illnesses. Two hospitals at KHMC were selected to recruit the sample; King Hussein Hospital and Queen

Alia Heart institute because patients with diabetes mellitus (DM) and cardiac illnesses are mainly treated in these two hospitals. KHMC, as one of the Royal Medical Services (RMS) Hospitals, offers primary and curative care services to active and retired members of the Armed Forces, Public Security Directorate, Department of Intelligence, Department of Civil Defense and their dependents, i.e. wife, husband, children, and parents. The RMS also provides coverage for the Royal Hashemite Court, ministers, and parliament members and for other beneficiaries who are employed by public organizations that hold contractual agreements with RMS. Furthermore, the RMS treats all uninsured patients referred from the Royal Hashemite Court, Ministry of Health (MoH), university hospitals, and the private sectors. The RMS effectively covers 1.6 million of Jordan's population (RMS Annual Statistical Report 2009), which includes a diverse set of Jordanians. Therefore, in order to assure generalization of the results from this study; KHMC was found as an appropriate site to gather information needed in this study.

Population and Sample

The plan was to use a hospital setting and the following sample; older Jordanian adults with the following chronic problems: hypertension, diabetes mellitus, asthma, and heart diseases. Since there were few older adult patients with hypertension and asthma who visited the outpatient clinics, it was not feasible to recruit an adequate number of subjects within the planned timeframe as a partial fulfillment of my doctoral degree. Therefore, my dissertation supervisors advised me to recruit patients with heart disease, DM and those who had both conditions.

The target population was older Jordanian adults with chronic illnesses. Therefore, the accessible population was older Jordanian adults with cardiac diseases and diabetes mellitus (DM) who attended the outpatient clinics in King Hussein Hospital and Queen Alia Heart Institute. A quota sampling technique was used to ensure subjects from each selected chronic illness category and both genders were adequately represented. The sample of this study was 184 subjects who met the following inclusion criteria:

- Older Jordanian adults (more than 60 years old)
- Diagnosed with one or both of the following chronic illnesses;
    - Cardiac disease
    - Diabetes Mellitus (DM)

To estimate the sample size for this study, G-power 3.0.1 was used. This software is a flexible statistical power analysis program for the social, behavioral, and biomedical sciences that is compatible with Cohen's (1992) effect size measures, and performs high-precision statistical power analyses to compute the sample sizes (Faul, Erdfelder, Lang & Buchner, 2007). Cohen (1992) proposed a power of .80 (1-ß= 0.80) as a convention for general use; a value smaller than .80 would incur too great risk of a Type II error; a larger value would result in a demand for sample size that is likely to exceed the investigator's resources (Cohen, 1992, p.156). Cohen (1992) also proposed that a medium effect size is desirable as it would be able to approximate the average size of observed effects in various fields. The medium effect size ranging from 0.2 to 0.4 are most common among nursing studies (Polit & Beck, 2004, p.498). A conventional power of .80, a conventional criterion of statistical significance (α) of .05, and medium effect size (0.5 for independent t-test and 0.25 for one way ANOVA) were specified for two tails test. The required total sample size

to perform the independent t-test was 128 subjects and for the one way ANOVA for three groups were 159.

Ethical Considerations

Prior to data collection, approval from the Scientific and Ethics Research Committees of the Faculty of Nursing and the University of Jordan was obtained. Following their approval, approval from the Ethical Committee of the Royal Medical Services was obtained (Appendix A). The purpose of the study was verbally explained to the prospective subjects. The subjects were informed that participation in the study was voluntary; they had the right to accept or refuse to participate. Confidentiality was ensured during all the stages of the study. Data were coded with numbers for identification – names were not used. No one other than the researcher had access to the codes. No risk or harm was anticipated from participation in the study. Potential benefits to the subject might be the sense of well being from the opportunity to discuss their methods of coping. Moreover, the research findings might contribute to the future care of the subjects. Finally, the subjects were informed that they could withdraw from the study at any time and that refusal or withdrawal would not affect the level of services they received in any way.

Data Collection Procedures

Data were collected by structured face-to-face interviews between April 1, 2009 to August 1, 2009. Although interviews are costly, prevent subjects' anonymity, and may bear the risk of interviewer bias, they have several advantages. They include a high response rate, they are appropriate for different population, and they decrease the risk of

misunderstanding of some questions (Polit & Beck, 2004). The purpose of using structured face-to-face interviews instead of questionnaires in this study was to overcome problems with participants' reading level and visual acuity and to ensure high response rate. In Jordan, older adults, especially women, tend to have lower literacy rates; therefore the interview ensured better representation and increased the reliability of the data. All the interviews were carried out by the researcher in the offices of the head nurses in both hospitals. Privacy was assured during the interviews.

Instrumentation

Data in this study, in accordance with Lazarus and Folkman's (1984) cognitive theory of stress and coping, were collected using quantitative instruments. These instruments included a socio-demographic and clinical data form (items 1-25 in appendix B); the ENRICHED Social Support Inventory (ESSI) (Mitchell et al., 2003) (items 26-31 in appendix B); the two-item Patient Health Questionnaire (PHQ-2) (Kronke, Spitzer, and Williams, 2003) (items 32 and 33 in appendix B); and the Jalowiec Coping Scales (JSC-60). The socio-demographic data form was developed by the researcher to obtain socio-demographic information, clinical characteristics, and quality of life indicators from each subject. It is comprised of gender, age, marital status, years of education, work status, work stressors, income, number of family members, and type of disease. The other instruments were translated into Arabic language (Appendices D and E). The process of translating of the research instruments will be described in a separate section in this chapter.

ENRICHED Social Support Inventory (ESSI)

The Enhancing Recovery in Coronary Artery Disease (ESSI) scale was used to measure social support in this study. This 7-item scale, was developed for the ENRICHD study (Mitchell et al., 2003) by identifying items regarding structural (partner), instrumental (tangible help), and emotional (caring) support previously found to be predictive of mortality in cardiovascular patients. The response categories ranged from 1 (none of the time) to 5 (all of the time), with item number 7 (living with spouse) scored 4 for "yes" and 2 for "no." Individual items were then summed for a total score, with higher scores indicating greater social support. The possible scores of this scale range from 8 to 34.

Reliability and Validity of ESSI

The performance of the ESSI was tested in 271cardiac patients who underwent Percutaneous Coronary Intervention (PCI) to treat ischemic artery disease, their age range from 37 – 88 years old (Vaglio, Jr et al., 2004). Concurrent and predictive validity were assessed by investigating the correlations between the ESSI total score and the Short Form Health survey (SF-36) (McHorney et al., 1993) Social Functioning, Mental Health Index, Mental Component, and Physical Component scales and the quality of life components of the Seattle Angina Questionnaire SAQ-QOL scale (Dougherty et al., 1998) at both baseline and 6-months post percutaneous coronary intervention (PCI). The ESSI demonstrated modest, but statistically significant correlations with these measures at both time points. This implies that patients with greater social support also experienced better social functioning, improved symptom control, and better general and disease-specific quality of

life. Internal consistency for the ESSI, using Cronbach's alpha, was = .88 (Vaglio, Jr et al., 2004).

Patient Health Questionnaire (PHQ-2)

The PHQ-2 is a two-item scale (Kronke, Spitzer, & Williams, 2003). It consists of the first two items of the PHQ-9, which is the full depression scale of the PHQ. The stem question is, “Over the last two weeks, how often have you been bothered by any of the following problems?” The two items are “little interest or pleasure in doing things’ and “feeling, down, depressed, or hopeless.”. The PHQ-2 is used as a screening tool for depression.

Reliability and Validity of PHQ-2

Construct validity of the PHQ-2 (Kronke, Spitzer, and Williams, 2003) was tested by exploring the association between PHQ-2 and other self report questionnaires. Löwe et al. (2005) on a study of 1619 medical outpatients (mean age 43±14 years) found that there is a statistically significant correlation between the PHQ-2 and PHQ-9 (r = . 87, p <.0001), Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith, 1983) (r = . 67), World Health Organization 5-item Well Being Index (WBI-5) (World Health Organization, 1998) (r = -.69), and mental components of the 12-item Short Form Health Survey (SF-12) (r =-.71) (Ware, et al., 1996). In the same study the reliability of the PHQ-2, assessed as internal consistency, Cronbach’s alpha = .83.

Jalowiec Coping Scale (JCS-60)

Many studies used either The Jaloweic Coping Scale (JSC or the modified version, the JCS-60 for collecting coping and coping strategies data (Jalowiec, 1993). The original JSC is composed of 40 items that assess different coping behaviors, both affective and problem-oriented (25 affective oriented and 15 problem-oriented). The Jalowiec Coping Scale (JSC-60) (Jalowiec, 2003) (Appendix C) is composed of 60 coping behaviors that are classified into eight coping styles: *Confrontive*; *Evasive*; *Optimistic*; *Fatalistic*; *Emotive*; *Palliative*; *Supportive*; and *Self-reliant* (Jalowiec, 1993) (Table 3.1). The subscales were rationally derived by the author via thematic clustering. The JCS-60 is divided into two parts; in part A the subject rates how much he/she has used each coping strategy to deal with or handle the stressor caused by the chronic illness. Degree of use of the coping strategy is rated on a four point Likert-type rating scale: 0 = never used, 1 = seldom used, 2 = sometimes used, 3 = often used. In part B the subject rates how effective each coping strategy was in relieving or decreasing the stress of the chronic illness. Degrees of effectiveness of the coping strategy are also rated on a four-point (0-3) rating scale: 0 = not helpful, 1 = slightly helpful, 2 = fairly helpful, 3 = very helpful.

If a subject did not use a particular coping strategy, then the subject should not rate the effectiveness of that item and should leave it blank. Scoring of the JCS-60 was done through summing the ratings for the coping strategies separately for use and for effectiveness. Then the overall coping use, the overall coping effectiveness, and use and effectiveness scores for each of the eight coping styles were calculated. Additionally, Jalowiec (2003) classified each one of the 60 coping strategies as either *Problem-focused* or *Emotional-focused*, as described earlier. (Appendix D).

Table (3.1)

Descriptions of each of the coping styles (Jalowiec, 2003)

Coping Style	No. of Items	Description
Confrontive	10	Constructive problem-solving, facing up to and confronting the problem or situation
Evasive	13	Doing things to avoid confronting the problem
Optimistic	9	Positive thinking or positive attitudes about the problem or the situation
Fatalistic	4	Pessimistic thinking or pessimistic attitudes toward the problem or situation
Emotive	5	Expressing/releasing emotions
Palliative	7	Doing things to make yourself feel better
Supportant	5	Using support systems (including religious support systems)
Self-reliant	7	Depending on yourself to deal with the situation, rather than on others.

Validity and reliability of the JCS-60

The content validity of JCS-60 was supported by the extensive literature and empirical base from which the coping items were drawn, the large number of items used to measure coping, and the inclusion of diverse cognitive and behavioral coping strategies. The content validity was judged by an expert panel. Construct validity was judged and evaluated by 25 researchers who were familiar with the stress and coping literature by examining the agreement with the author's classification into subscales. Agreement was highest on the *Supportant* subscale (94%) and lowest on the *Emotive* subscale (54%); agreement for all 8 subscales = 75%, which largely supports Jalowiec's classification of the JCS items into 8 subscales (Jalowiec, 2003).

Criterion validity was based on concordance between coping strategies used and results from qualitative coping interviews (Jalowiec, 2003). Concurrent and predictive

validity were supported by a heart transplant study, where patients who scored higher on coping effectiveness on the JCS had better outcomes, such as: less stress, perception of a better ability to cope with their illness, fewer psychological symptoms, better emotional and social functioning, more life satisfaction, and better quality of life. Patients who used *Evasive*, *Fatalistic* or *Emotive* coping strategies had more stress, more psychological symptoms and a perception of poor ability to cope with the illness (Jalowiec, 2003). Regarding reliability, Jalowiec found Cronbach's alpha for total use of the scale =.88 and Cronbach's alpha for total effectiveness, scale = .91. Cronbach's alpha for the use subscales ranged from .47 to .89 and for the effectiveness subscales ranged from .49 to .89. The three strongest subscales in terms of homogeneity reliability for both use (U) and effectiveness (E) were *Confrontive* (U =.82; E =.83), *Evasive* (U =.78; E =.81), and *Optimistic* (U =.78; E =.78) (Jalowiec, 2003).

Translation Process of the Research Instruments

The JCS has been translated to French (St-Louis & Robichard-Ekstrand, 2003), Chinese (Mok & Tam, 2001), and Swedish (Lindqvist et al., 2000). The translation of instruments and using them in different contexts necessitates further testing to establish the psychometric properties of these instruments. Beaton et al.'s (2000) guidelines for the process of cross-cultural adaptation of self-report measures were used in this study to attain equivalence between the original JCS-60, the ESSI, and the PHQ-2 instruments and the translated versions of these instruments (Appendix E and items 26 to 33 in appendix B). The process involved the adaptation of individual items, the instructions for the questionnaire, and the response options. For the first step, two forward translations by two

independent bilingual translators, whose native tongue was Arabic, were performed for the instrument from the English language to the Arabic language to produce two independent translations. The first translation (T1) was produced by an expert nurse who had postgraduate qualifications in adult health nursing and was familiar with the instruments. The second translation (T2) was produced by an English teacher who had no medical or clinical background. In the second step, the two translators and the researcher met and compared the two translations (T1 and T2). Ambiguous wording and discrepancies were identified. Then, working from the original instruments as well as the first translation (T1) and the second translation (T2), a synthesis of one common translation (T-12) was produced. In the third step, two back translations (BT1 and BT2) were produced by two English teachers who were not informed or aware of the concepts explored, and had no medical or clinical background. This helped to avoid information bias and to prevent unexpected meanings of the items in the translated instruments. This process of validity checking was to check that the translated versions reflected the same item content as the original instruments (Beaton et al., 2000).

In the fourth step, the content and face validity of the translated instruments was established by an expert committee. This committee consisted of the translators (forward and backward), the researcher, and a panel of five expert nurses. All the nurses in the panel had postgraduate qualifications in nursing.

The expert committee reviewed all translated questionnaires and compared the original instruments with back-translated versions (T1, T2, T12, BT1, and BT2). The versions were found to be identical. The expert committees supported the content validity, cultural appropriateness and semantic correctness of concepts of the instruments. They agreed on the pre-final version of the instruments for field testing.

Pilot Test

A pilot study on 10 subjects from the same population was done to test the interview questions for clarity of the translated instruments and to determine how much time the interviews would take to complete. After the pilot study, minor modifications were made to some items to make them clearer before the actual data collection. The time needed for the interviews ranged between 32 to 42 minutes. Data from the pilot study were not used in the study data analysis.

Data Analysis

Analysis of data was carried out by using the Statistical Package for Social Science (SPSS) version 16, according to the research questions. Descriptive and inferential statistics were used for analyzing the data. The characteristics of the subjects were described using descriptive statistics in terms of means, standard deviation, range, and percentages. For the first research question, which asked about the coping strategies used by older Jordanian adults to cope with chronic illness, the subjects' total scores on the JSC-60, part A and part B, as well as scores on the eight subscales were calculated; the question was answered by determining what coping strategies and styles were used by subjects with different types of chronic illness and the effectiveness of these strategies and styles.

The second research question was answered by comparing the mean scores of men with the mean scores of women on the total JSC-60 (Parts A and B) subscales, and strategies to determine if there was a difference in the means between the two groups. Independent t-tests were used to compare the means of the two groups to determine if there were statistically significant differences in the coping strategies and styles.

The third research question was answered by calculating the mean scores of subjects in the three diseases groups (cardiac patients, diabetic patients, and patients with both diseases) and an Analysis of Variance (ANOVA) was used to determine if there were statistically significant differences among the three groups in the use and effectiveness of coping strategies and coping styles. The Scheffe test was used for Post Hoc comparisons where statistically significant differences existed.

The fourth research question was similarly analyzed by comparing the mean scores of subjects with one chronic illness with those who had more than one chronic illness; independent t-tests were used to compare the means of the two groups.

Chapter Four

Results

Chapter four presents the results of this study which addressed the Coping Strategies of Older Jordanian Adults with Chronic Illness. The first section describes the demographic and socioeconomic characteristics, clinical characteristics, and perception of health of subjects with cardiac diseases, diabetes mellitus (DM), and subjects with both diseases. The second section addresses the specific research questions.

Demographic and socioeconomic characteristics

The researcher approached 186 potential subjects; two of whom declined participation in the study. Thus 184 subjects were interviewed; 114 men and 70 women. Seventy-five of the subjects had a cardiac diagnosis, 57 had a diabetes (DM) diagnosis, and 52 had both diseases. The majority of subjects in the cardiac and DM samples were men, whereas in the mixed sample, there was a greater proportion of women.

Table 4.1 includes a summary of the sample characteristics. The majority were married, although more men were married than women. The range of family size was 1 to 22, with an average of over 8. There were fewer literate subjects among the cardiac group. Women had lower levels of education and literacy than men in all the three disease groups. Nearly half of the men in all three groups were retired. The majority of women reported they were unemployed (women's role in Jordan historically has been to work in the home, rather than outside). About half the men and a third of women reported their family income was less than 300 JD, which is below the poverty line (323 JDs/month) (DOS, 2008). When the subjects were asked "Does the family income meet the family's needs?" a third of the cardiac group said yes, while just over half of the DM group and the mixed group said yes.

Table (4.1)

Demographic and socioeconomic characteristics of subjects in three disease categories

		Cardiac Group (n =75)				DM Group (n =57)*				Mixed Group (n =52)			
		Men (n =53)		Women (n =22)		Men (n =36)		Women (n=21)		Men (n =25)		Women (n =27)	
		%	n	%	n	%	N	%	n	%	N	%	n
Marital status	Married	96.2	51	59.1	13	94.4	34	76.2	16	88	22	66.7	9
	S/W/D**	3.8	2	40.9	9	5.6	2	23.8	5	12	3	33.3	18
Education	Illiterate	23.1	12	59.1	13	8.3	3	28.6	6	8	2	48.1	13
	< 6 years	26.9	14	22.7	5	19.4	7	33.3	7	20	5	33.3	9
	≥ 6 yrs & < 12	17.3	9	13.6	3	38.9	14	28.6	6	24	6	11.1	3
	High school*	11.5	6	4.5	1	19.4	7	4.8	1	16	4	7.4	2
	Diploma	11.5	6	0	0	2.8	1	4.8	1	8	2	0	0
	BA/BS & more	9.6	5	0	0	11.1	4	0	0	24	6	0	0
Work Status	Retired	56.6	30	0	0	55.6	20	9.5	2	44	11	7.4	2
	Full or Part time	18.8	10	0	0	16.6	6	4.8	1	16	4	3.7	1
	Not/Unemployed/ Home maker	24.5	13	100	22	27.8	10	85.7	18	40	10	88.9	24
Work Stressors* **	Very much	40	4	0	0	16.7	1	0	0	0	0	0	0
	Intermediate	20	2	0	0	33.3	2	100	1	0	0	0	0

		Cardiac Group (n =75)				DM Group (n =57)*				Mixed Group (n =52)			
		Men (n =53)		Women (n =22)		Men (n =36)		Women (n=21)		Men (n =25)		Women (n =27)	
		%	n	%	n	%	N	%	n	%	N	%	n
	Little	10	1	0	0	16.7	1	0	0	50	2	0	0
	None	30	3	0	0	33.3	2	0	0	50	2	100	1
Family monthly income	<150 JDs	11.3	6	4.5	1	5.6	2	9.5	2	4	1	7.4	2
	151-300 JDs	35.8	19	36.4	8	55.6	20	23.8	5	28	7	22.2	6
	301-450 JDs	20.8	11	9.1	2	13.9	5	19	4	28	7	14.8	4
	451-600 JDs	13.2	7	27.3	6	5.6	2	23.8	5	16	4	22.2	6
	601 + JDs	7.5	4	13.6	3	11.1	4	19	4	16	4	25.9	7
	Do Not Know	11.3	6	9.1	2	8.3	3	4.8	1	8	2	7.4	2
Does Income meet family needs?	Yes	32	16	42.9	9	45.5	15	61.9	13	52	13	59.3	16

* Diabetes Mellitus **Single, Widow, Divorced S/W/D *** Among the subjects who reported working full and part time (Cardiac 11,DM 7, and Mixed 5)

Clinical Characteristics

Sixty percent of the cardiac subjects and 25% of the mixed group had coronary heart disease. Thirty-two percent of the cardiac patients and 22% of the mixed group previously had cardiac surgery. About 60% of the DM subjects and 52% of the mixed group were diagnosed as Type 2 diabetes mellitus, now called Non-insulin dependent diabetes mellitus (NIDDM). Sixty-three percent, of the DM group and 79% of the mixed group were treating their diabetes with oral hypoglycemic medications. For those in the DM group, who had their HbA1c recorded in their medical record, few had their diabetes under control. None of the mixed group had their diabetes under control (Tables 4.1, 4.2).

Table (4.2)

Clinical characteristics of subjects in three disease categories

	Cardiac Group (n=75)				**DM Group (n=57)***				**Mixed Group (n=52)**			
	Men (n = 53)		**Women (n = 22)**		**Men (n = 36)**		**Women (n = 21)**		**Men (n = 25)**		**Women (n = 27)**	
	%	**n**	**%**	**N**	**%**	**n**	**%**	**N**	**%**	**n**	**%**	**n**
Method of DM control												
Diet and exercise	-	-	-	-	0	0	0	0	4	1	3.7	1
Oral hypoglycemic medications	-	-	-	-	52.8	19	81	17	72	18	85.2	23
Insulin	-	-	-	-	47.2	17	19	4	24	6	11.1	3
Diabetes controlled (HbA1c ≤ 6.5)*****					19	4	4.8	1	0	0	0	0
Cardiac surgery												
Yes	32.1	17	31.8	7	-	-	-	-	32	8	11.1	3

* Diabetes Mellitus **of subjects who have their HbA1c recorded (Men 32, Women 14)
*** HbA1c = Hemoglobin, Type A1c

The subjects experienced previous hospital admissions, additional comorbidities (subjects who were categorized under mixed diagnoses were assigned one comorbidity) and

needed to manage a complex medication regimen. The mixed groups had more prior admissions, double the comorbidities, and took more medications than either the cardiac group, or the DM group (Table 4.3).

Table (4.3)
Previous admissions, comorbidities and current medications use of study groups by disease

	Disease		
	Cardiac Group (n=75)	**DM Group* (n = 57)**	**Mixed Group (n =52)**
	Mean (±SD)	Mean (±SD)	Mean (±SD)
Previous admissions	2.89 (±2.40)	3.22 (±3.36)	4.68 (±4.17)
Comorbidities	0.68 (±0.76)	0.86 (±1.37)	1.81 (±0.63)
Current Medication	5.86 (±1.81)	3.32 (±2.18)	6.55 (±2.53)

* Diabetes Mellitus

Perception of Health

Women in the DM and mixed groups reported poorer health than the men. For the cardiac group, these findings were reversed; men reported poorer health than did the women. Overall, a slightly higher percentage of women stated their health was poor

More than half of all the subjects stated the quality of their sleep was “excellent, very good, or good”. More men in the cardiac and mixed groups reported they felt relaxed upon awakening than did women. Considerably more subjects reported no-or-mild pain, except women in the mixed group, who reported more intermediate or severe pain. Men reported less pain than women in all three disease groups. More women reported at least one depressive symptom than men in the cardiac group. In the DM and mixed groups, more men than women reported depressive symptoms (Table 4.4).

The ENRICHED Social Support Inventory (ESSI) results identified the social support for all subjects. The results showed that mean (± SD) of the ESSI score in the three disease categories were 26.86 (± 6.01) in cardiac group subjects, 26.11 (± 4.92) in DM group subjects and 25.64 (± 5.42) in the mixed group subjects, which values were not statistically significant. More men reported better social support than did women, which was a statistically significant difference ((27.31 (± 5.34) vs. 24.58 (± 5.41), p = 0.00) (Table 4.5).

Table (4.4)
Health perception of subjects by disease and gender

	Cardiac Group (n=75)				DM Group (n=57)*				Mixed Group (n=52)			
	Men (n=53)		Women (n=22)		Men (n=36)		Women (n=21)		Men (n=25)		Women (n=27)	
	%	n	%	n	%	n	%	n	%	n	%	n
Perception of health												
Good health	47.2	25	59.1	13	50	18	42.9	9	52	13	37	10
Poor health	52.8	28	40.9	9	50	18	57.1	12	48	12	63	17
Quality of sleep												
Good/Very Good/Excellent	64.2	34	50	11	55.6	20	57.2	12	57.1	64	51.8	14
Poor/ Fair	35.8	19	50	11	44.4	16	42.9	9	42.9	36	48.1	13
Feeling upon awakening												
Relaxed	54.7	29	45.5	10	47.2	17	52.4	11	52	13	37	10
Tired	45.3	24	54.5	12	52.8	19	47.6	10	48	12	63	17
Pain (last 4 weeks)												
No pain/Very mild/ Mild pain	71.7	38	59.1	13	75	27	61.9	13	60	15	48.1	13
Intermediate pain/ Severe pain	28.3	15	40.9	9	25	9	33.3	7	40	10	51.8	14
Patient Health Questionnaire (PHQ-2)												
No Depressive Symptoms	73.6	39	36.4	8	61.1	22	76.2	16	48	12	59.3	16
At least one depressive symptom	26.4	14	63.6	14	38.9	14	23.8	5	52	13	40.7	11

* Diabetes Mellitus

Table (4.5)

t-test Enriched Social Support Inventory (ESSI) by gender

	T	Df	Mean Difference	95% Confidence Interval of the Difference		Sig. (2-tailed)
				Lower	Upper	
ESSI	3.33	180	2.73	1.11	4.35	0.00*

* p < 0.0

Answers to Specific Research Questions

The Jalowiec coping scale (JCS) Part A identified the coping strategies used by Jordanian older adults with chronic illnesses. The 60 coping strategies fall into eight coping styles, which include *Confrontive, Evasive, Optimistic, Fatalistic, Emotive, Palliative, Supportant, and Self-reliant. (Appendix C.)*

The JCS Part B identified the effectiveness of each coping strategy for relieving or decreasing the stress of their chronic illness. Additionally, each of the 60 coping strategies, both those used and listed as effective, was identified as either *Problem-focused* or *Emotional-focused*. Therefore, each research question will be answered in the format of used strategies, used styles, effective strategies, and effective styles, followed by whether the subjects used *Emotional-focused* or *Problem-focused* strategies.

Question Number one: *What are the coping strategies used by older Jordanian adults to cope with chronic illnesses?*

Coping Strategies Used by older Jordanian Adults

Subjects in the Cardiac group, the Diabetes (DM) group, and the Mixed group all used *Prayed or put your trust in God* (*Supportant* coping style) as their number one coping strategy (appendices F, G, and H). The cardiac group subjects' second most frequently used coping strategies were: *Got mad and let off steam* (*Emotive*), and *Set up a plan of action*

(*Confrontive*) (Appendix F). The DM group subjects' second most frequently used coping strategies were: *Worried about the problem* (*Emotive*), and *Told yourself that things could be much worse* (*Optimistic*) (Appendix G). The mixed group subjects' second most frequently used coping strategies were: *Ate or smoked more than usual* (*Palliative*), and *Thought about the good things in your life* (*Optimistic*) (Appendix H).

Coping Styles Used by Older Jordanian Adults

When the coping strategies were clustered into their respective coping styles, all three groups identified *Supportant* and *Emotive* as the top two most used coping styles. Both the cardiac and DM groups listed *Fatalistic* as the third most used coping style, while the mixed group listed *Optimistic* as one of the top three coping styles. The mean score (±SD) for all subjects for used coping styles was 2.06 (±0.34) where the possible range of scores was from 1 to 3 (Table 4.6).

Table (4.6)

Means (±SD) for Jalowiec Coping Scale (JCS) coping styles used by disease category

	Disease							
	Cardiac Group n=75		**DM* Group n=57**		**Mixed Group n=52**		**Total n=184**	
Styles	**n**	**Mean (±SD)**	**n**	**Mean (±SD)**	**n**	**Mean (±SD)**	**N**	**Mean (±SD)**
Confrontive	72	1.89 (±0.60)	56	1.88 (±0.50)	51	2.00 (±0.53)	179	1.92 (±0.56)
Evasive	75	2.08 (±0.45)	57	1.91(±0.40)	50	2.07 (±0.49)	182	2.02 (±0.44)
Optimistic	75	2.10 (±0.45)	57	2.00 (±0.40)	52	**2.20 (±0.43)**	184	2.10 (±0.43)
Fatalistic	70	**2.12 (±0.67)****	57	**2.04 (±0.54)**	49	2.22 (±0.55)	176	2.13 (±0.59)
Emotive	70	**2.19 (±0.59)**	53	**2.04 (±0.62)**	46	**2.26 (±0.52)**	169	2.16 (±0.59)
Palliative	74	2.00 (±0.49)	55	1.91 (±0.48)	52	2.04 (±0.44)	181	1.98 (±0.48)
Supportant	75	**2.23 (±0.39)**	57	**2.24 (±0.40)**	52	**2.32 (±0.50)**	184	2.27 (±0.43)
Self-Reliant	74	1.92 (±0.54)	56	1.91(±0.50)	52	2.06 (±0.56)	182	1.96 (±0.53)
Overall JCS	75	2.06 (±0.35)	57	1.99 (±0.31)	52	2.13 (±0.36)	184	2.06 (±0.34)

*Diabetes Mellitus **Three highest coping styles in each of the three disease groups are in bold

Effective Coping Strategies Identified by Older Jordanian Adults

Similar to the coping strategies identified as used results for JCS Part A, the JCS Part B indicated that the subjects from all three groups felt the most effective coping strategy was *Prayed or put your trust in God (Supportant).* However, they differed in their thinking about which other two coping strategies were most effective strategies. Both the cardiac and mixed group felt the *Relaxation technique (Palliative)* was one of the most effective. The cardiac subjects also included *Set up a plan of action (Confrontive),* while the DM subjects identified *Tried to think about the problem (Confrontive)* and *Talked the problem over with someone who had been in a similar situation (Supportant*), as the next two most effective coping strategies. The mixed group subjects included *Thought about the good things in your life (Optimistic)* as a coping strategy (Appendices I, J, and K).

Effective Coping Styles Identified by Older Jordanian Adults

All three groups of older Jordanians with chronic diseases identified *Supportant* as the most effective coping style. The cardiac and DM groups listed *Palliative* as the next most effective coping styles. The cardiac and mixed groups included *Optimistic*, while the DM and mixed group both listed *Confrontive* as one of the top three coping styles (Table 4.7).

Table (4.7)

Means (±SD) of perceived effectiveness of Jalowiec Coping Scale coping styles by disease category

	Disease							
	Cardiac Group n=75		DM* Group n=57		Mixed Group n=52		Total n=184	
Styles	**n**	**Mean (±SD)**	**n**	**Mean (±SD)**	**n**	**Mean (±SD)**	**n**	**Mean (±SD)**
Confrontive	72	1.77 (±0.63)	56	**1.69 (±0.54)**	51	**1.83 (±0.59)**	179	1.76 (± 0.59)
Evasive	75	1.45 (±0.54)	57	1.31 (±0.55)	50	1.64 (±0.54)	182	1.46 (± 0.55)
Optimistic	75	**1.78 (±0.54)**	57	1.67 (±0.52)	52	**1.89 (±0.58)**	184	1.77 (± 0.55)
Fatalistic	70	1.35 (±0.77)	57	1.40 (±0.67)	49	1.43 (±0.67)	176	1.39 (± 0.71)
Emotive	70	0.73 (±0.67)	53	1.06 (±0.69)	46	0.84 (±0.75)	169	0.86 (± 0.71)
Palliative	74	**1.79 (±0.55)**	55	**1.76 (±0.60)**	52	1.74 (±0.56)	181	1.77 (± 0.56)
Supportant	75	**2.07 (±0.48)**	57	**2.03 (±0.48)**	52	**2.06 (±0.57**)	184	2.06 (± 0.51)
Self-Reliant	74	1.58 (±0.65)	56	1.58 (±0.57)	52	1.71 (±0.57)	182	1.62 (± 0.59)
Overall JCS	75	1.63 (±0.42)	57	1.57 (±0.45)	52	1.74 (±0.46)	184	1.64 (± 0.44)

*Diabetes Mellitus **Three highest coping styles in each of the three disease groups are in bold

Subjects from all three groups used *Emotional-focused* strategies more than *Problem-focused* strategies. However, they considered *Problem-oriented* strategies to be more effective, but the differences were not statistically significant (Table 4.8).

Table (4.8)

Means (±SD) of the emotional-oriented and problem oriented use and effectiveness of Jalowiec Coping Scale coping strategies by disease

	Disease		
	Cardiac Group (n = 75)	**DM Group (n = 57)**	**Mixed Group (n = 52)**
	Mean (±SD)	**Mean (±SD)**	**Mean (±SD)**
Emotional-Oriented (Use)	2.13(±0.35)	2.02(±0.33)	2.16 (±0.34)
Problem- Oriented (Use)	1.96 (±0.42)	1.93(±0.35)	2.10 (±0.46)
Emotional-Oriented (Effectiveness)	1.57(±0.40)	1.49(±0.46)	1.66 (±0.43)
Problem-Oriented (Effectiveness)	1.72 (±0.50)	1.68 (±0.47)	1.84 (±0.53)

Question number two: *Are there gender differences in coping strategies used by older male and female patients?*

Gender Differences in Used Coping Strategies

Both men and women listed *Prayed or put your trust in God (Supportant)* as their most frequently used *coping strategy*. The second two most frequent coping strategies used by men were: *Got mad and let off steam (Emotive)*, and *Told yourself that things could be much worse* (Optimistic).The second most frequently used coping strategies by women were: *Worried about the problem (Emotive)*, and *Thought about the good things in your life (Optimistic)* (Appendices L and M).

The results of an independent t-test showed statistical differences for five coping strategies. In each case, men used them more than women. The five coping strategies that were statistically different, with 95% Confidence Intervals (CI), were: *Tried to get away from the problem for a while (Evasive)* (2.27 ± 0.73 for men and 1.80 ± 0.63 for women, p = 0.00); *Got mad and let off steam (Emotive)* (2.40 ± 0.66 for men and 2.02 ± 0.84 for women, p = 0.00)*, Tried to put the problem out of your mind and think of something else (Evasive)* (2.20 ± 0.7,0 for men and 1.90 ± 0.72 for women, p = 0.01*), Resigned yourself to the situation because things looked hopeless (Fatalistic)* (2.00 ± 0.70 for men and = 1.59 ± 0.64 for women, p = 0.01); *and Preferred to work things out yourself (Self-reliant*) (2.10 ± 0.66, for men and = 1.80 ± 0.79 for women , p = 0.01)
(Table 4. 9).

Table (4.9)

t-test of Jalowiec Coping Scale coping strategies use by gender

Coping Strategy	T	df	Mean Difference	95% Confidence Interval of the Difference		Sig. (2-tailed)
				Lower	Upper	
Tried to get away from the problem for a while	2.96	135	0.38	0.12	0.63	0.00
Got mad and let off steam	2.92	135	0.38	0.12	0.63	0.00
Tried to put the problem out of your mind and think of something else	2.58	144	0.31	0.07	0.54	0.01
Resigned yourself to the situation because things looked hopeless	2.55	69	0.41	0.09	0.72	0.01
Preferred to work things out yourself	2.49	141	0.30	0.06	0.55	0.01

Gender Differences in Used Coping Styles

Both men and women identified *Supportant* and *Emotive* as the two most used coping styles. Men also included *Fatalistic,* while women included *Optimistic* as the third most used coping style. The overall mean (± SD) of for men was 2.09 (±0.34), and for women, it was 2.00 (±0.34) were the possible scores was from 1 to 3 (Table 4.10).

Table (4.10)

Means (±SD) of the used Jalowiec Coping Scale coping styles by gender

Coping Styles	Gender			
	Men n= 114		Women n= 70	
	N	Mean (±SD)	n	Mean (±SD)
Confrontive	109	1.95 (±0.55)	70	1.87 (±0.56)
Evasive	112	2.09 (±0.46)	70	1.90 (±0.41)
Optimistic	114	2.11 (±0.42)	70	**2.08 (±0.45)**
Fatalistic	107	**2.18 (±0.61)***	69	2.04 (±0.59)
Emotive	103	**2.17 (±0.55)**	66	**2.13 (±0.64)**
Palliative	111	2.00 (±0.48)	70	1.97 (±0.46)
Supportant	114	**2.27 (±0.43)**	70	**2.25 (±0.42)**
Self-Reliant	112	2.02 (±0.52)	70	1.86 (±0.54)
Overall JCS	114	2.09 (±0.34)	70	2.00 (±0.34)

* The three highest means are in bold

However, the results of an independent t-test showed statistical differences for two coping styles. The two coping styles that were statistically different, with 95% Confidence Intervals (CI), were the *Evasive* coping style, 2.09 (±0.46) in men and 1.90 (± 0.41) in women (p = 0.01), and the *Self- reliant* coping style, 2.02 (±0.52) in men and 1.86 (±0.54) in women (p= 0.03) (Table 4.11).

Table (4.11)

t-test of Jalowiec Coping Scale coping styles use by gender

Coping Styles	**t**	**df**	**Mean Difference**	**95% Confidence Interval of the Difference**		**Sig. (2-tailed)**
				Lower	**Upper**	
Confrontive	0.77	177	0.07	-0.10	0.23	0.44
Evasive	2.74	180	0.18	0.05	0.32	**0.01***
Optimistic	0.47	182	0.03	-0.10	0.16	0.64
Fatalistic	1.44	174	0.13	-0.05	0.31	0.15
Emotive	0.37	167	0.03	-0.15	0.22	0.71
Palliative	0.43	179	0.03	-0.11	0.17	0.67
Supportant	0.34	182	0.02	-0.11	0.15	0.73
Self-Reliant	2.13	180	0.17	0.01	0.33	**0.03***
Overall JCS	1.69	182	0.09	-0.01	0.19	0.09

* $p < 0.05$

Gender Differences in Effective Coping Strategies

Both men and women listed *Prayed or put your trust in God* (*Supportant*) as one of the three most effective strategies. The second most perceived effective strategies identified by men were: *Used relaxation techniques* (*Palliative*), and *Tried to find out more about the problem* (*Confrontive*) (Appendix N). Women included *Talked the problem over with someone who had been in a similar situation* (*Supportant*), and *Tried to keep a sense of humor* (*Optimistic*) (Appendix O).

The results of an independent t-test showed statistical differences for the perceived effectiveness of seven coping strategies. The seven coping strategies that were statistically different, with 95% CI, were *Hoped that things would get better (Optimistic)* (2.02 ± 0.83 for men and 1.73 ± 0.80 for women, p = 0.03), *Got mad and let off steam) (Emotive)* 0.78 ± 0.95 for men and 1.22 ± 0.83 for women, p = 0.01); *Kept your feelings to yourself (Self-reliant)* (1.72 ± 0.74 for men and 1.43 ± 0.90 for women, p = 0.05), *Slept more than usual (Palliative)* (1.74 ± 0.90 for men and 1.16 ± 0.72 for women, p = 0.00), *Put off facing up to the problem (Evasive)* (1.02 ±0.88 for men and 1.38 ± 0.63 for women, p = 0.02), *Preferred to work things out yourself (Self-reliant)* (1.75 ± 0.80 for men and 1.43 ± 0.81 for women, p = 0.02), *and Avoided being with people (Evasive)* (2.02 ± 0.94 for men and 1.57 ± 0.97 for women, p = 0.05) (Table 4. 12).

Table (4.12)

t-test of Jalowiec Coping Scale coping strategies perceived effectiveness by gender

Coping Strategies	**t**	**df**	**Mean Difference**	**95% Confidence Interval of the Difference**		**Sig. (2-tailed)**
				Lower	**Upper**	
Hoped that things would get better	2.26	166	0.29	0.04	0.55	0.03
Got mad and let off steam	-2.72	135	-0.44	-0.75	-0.12	0.01
Kept your feelings to yourself	2.00	125	0.29	0.00	0.58	0.05
Slept more than usual	3.03	73	0.59	0.20	0.97	0.00
Put off facing up to the problem	-2.45	104	-0.37	-0.66	-0.07	0.02
Preferred to work things out yourself	2.35	141	0.33	0.05	0.60	0.02
Avoided being with people	2.03	73	0.46	0.01	0.90	0.05

Gender Differences in Effective Coping Styles

Both men and women identified *Suportant* and *Palliative* as two of the three most effective coping styles. Men also identified *Confrontive* and women identified *Optimistic* as one of the three most perceived effective coping styles. The overall mean (± SD) was 1.65 (±0.46), and for women, it was 1.63 (±0.42) (Table 4.13). The differences in mean values of effectiveness of the coping styles by gender were evaluated using independent t-test. There were no statically significant differences in the overall effectiveness of JCS in the eight coping styles by gender.

Table (4.13)

Means (±SD) of effectiveness of Jalowiec Coping Scale coping styles by gender

	Gender			
	Men n= 114		Women n= 70	
Coping Styles	**n**	**Mean (±SD)**	**n**	**Mean (±SD)**
Confrontive	109	**1.80 (±0.59)***	70	1.69 (±0.60)
Evasive	112	1.46 (±0.58)	70	1.47 (±0.52)
Optimistic	114	1.77 (±0.56)	70	**1.77 (±0.54)**
Fatalistic	107	1.34 (±0.74)	69	1.45 (±0.65)
Emotive	103	0.79 (±0.74)	66	0.99 (±0.66)
Palliative	111	**1.81 (±0.56)**	70	**1.71 (±0.57)**
Supportant	114	**2.05 (±0.47)**	70	**2.07 (±0.55)**
Self-Reliant	112	1.66 (±0.60)	70	1.56 (±0.58)
Total JCS	114	1.65 (±0.46)	70	1.63 (±0.42)

* The three highest means are in bold

Men used more *Emotional-focused* and *Problem-focused* coping strategies than women, with the use of *Emotional- focused* strategies being statistically significant (p = 0.02) (Table 4.14). Men also, perceived *Emotional-focused* strategies to be more effective than women but the difference was not statistically significant.

Table (4.14)

t-test emotional and problem-focused use of Jalowiec Coping Scale coping strategies by gender

	t	**df**	**Mean Difference**	**95% Confidence Interval of the Difference**		**Sig. (2-tailed)**
				Lower	**Upper**	
Emotional-focused (Use)	2.35	182	0.12	0.02	0.22	**0.02***
Problem-focused (Use)	0.72	182	0.05	-0.08	0.17	0.47

* $p < 0.05$

Question number three: *Are there different coping strategies used by older adults based on the most prevalent chronic illnesses?*

Differences in Used Coping Strategies by Prevalent Chronic Illnesses

All three groups' used *Prayed or put your trust in God* (*Supportant* coping style) as their number one *coping strategy* (appendices F, G, and H). The cardiac group subjects' second most frequently used *coping strategies* were: *Got mad and let off steam* (*Emotive*), and *Set up a plan of action* (*Confrontive*) (Appendix F). The DM group subjects' second most frequently used coping strategies were: *Worried about the problem* (*Emotive*), and *Told yourself that things could be much worse* (*Optimistic*) (Appendix G). The mixed group subjects' second most frequently used coping strategies were: *Ate or smoked more than usual* (*Palliative*), and *Thought about the good things in your life* (*Emotive*) (Appendix H). In summary, subjects in the three groups identified coping strategies related to *Supportant* and *Emotive* as the top two most used coping styles.

The comparisons of differences in use of coping strategies by the cardiac group the DM group, and mixed groups were evaluated using an ANOVA test. Nine strategies statistically differed by disease. These strategies were *Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor) (Supportant)* (F = 5.97, df, 2 p = 0.00), *Waited to see what would happen (Evasive)* (F = 6.62, df, 2 p = 0.00), *Told yourself not to worry because everything would work out fine (Optimistic)* (F = 4.19, df, 2 p = 0.02), *Tried to distract yourself by doing something that you enjoy (Palliative)* (F = 3.30, df, 2 p = 0.04), *Told yourself that you could handle anything no matter how hard (Self-reliant)* (F = 5.39, df 2 p = 0.01), *Set up a plan of action (Confrontive)* (F = 4.34, df, 2 p = 0.02), *Tried to keep a sense of humor (Optimistic)* (F =5.72, df, 2 p = 0.00), *Thought about the good things in your life (Optimistic)* (F = 4.37, df, 2 p = 0.01), and *Practiced in your mind what had to be done (Confrontive)* (F = 3.11, df, 2 p = 0.05).

The results of the nine statistically different coping strategies were further analyzed to determine specific differences among the three disease categories. The post-hoc comparisons Scheffe test revealed that there is a statistically significant difference in use of *Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)* between the mixed and cardiac groups (p = 0.00)**;** *Waited to see what would happen* between the cardiac and DM groups (p = 0.00)**,** *Told yourself not to worry because everything would work out fine* between the DM -and mixed groups (p = 0.02); *Tried to distract yourself by doing something that you enjoy* between the DM and cardiac groups (p = 0.04); *Told yourself that you could handle anything no matter how hard* between the mixed and DM groups (p = 0.01); *Set up a plan of action* between the cardiac and DM groups (p = 0.02); *Tried to keep a sense of humor* between the mixed and DM

groups (p = 0.00); and *Thought about the good things in your life* between the mixed and DM groups (p = 0.02). Although the use of *Practiced in your mind what had to be done* was statistically significant, post hoc comparisons did not reveal any statistically significant differences between the groups.

Differences in Used Coping Styles by Prevalent Chronic Illnesses

All three groups identified *Supportant* and *Emotive* as the top two most used coping styles. Both the cardiac and DM groups listed *Fatalistic* as the third most used coping style, while the mixed group listed *Optimistic* as one of the top three coping styles (Table 4.6).

The comparison of differences in use of coping styles by cardiac group, DM group, and the mixed group were evaluated using an ANOVA test; the only statistically significant coping style that differed by disease was *Optimistic* use (F = 2.96, df 2, p = 0.05) (Table 4.15).

Table (4.15)

ANOVA of use of Jalowiec Coping Scale coping styles by disease category

ANOVA						
Coping Styles		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Confrontive	Between Groups	0.45	2	0.23	0.74	0.48
	Within Groups	53.77	176	0.31		
	Total	54.22	178			
Evasive	Between Groups	1.02	2	0.51	2.56	0.08
	Within Groups	35.47	179	0.20		
	Total	36.48	181			
Optimistic	Between Groups	1.10	2	0.55	2.96	**0.05**
	Within Groups	33.52	181	0.19		

ANOVA						
Coping Styles		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
	Total	34.61	183			
Fatalistic	Between Groups	0.91	2	0.46	1.28	0.28
	Within Groups	61.67	173	0.36		
	Total	62.58	175			
Emotive	Between Groups	1.28	2	0.64	1.89	0.15
	Within Groups	56.25	166	0.34		
	Total	57.53	168			
Palliative	Between Groups	0.49	2	0.24	1.10	0.33
	Within Groups	39.49	178	0.22		
	Total	39.98	180			
Supportant	Between Groups	0.29	2	0.14	0.79	0.45
	Within Groups	32.90	181	0.18		
	Total	33.19	183			
Self-Reliant	Between Groups	0.83	2	0.41	1.45	0.24
	Within Groups	50.87	179	0.28		
	Total	51.70	181			
Overall JCS	Between Groups	0.58	2	0.29	2.50	0.09
	Within Groups	21.13	181	0.12		
	Total	21.71	183			

The results of the *Optimistic* coping style were further analyzed to determine specific differences among the three disease categories. The post-hoc comparisons Scheffe test revealed that there was a statistically significant difference ($p = 0.05$) in use of *Optimistic* coping styles between the mixed group and DM group subjects (Mixed group subjects used more *Optimistic* coping style than DM group subjects) (Table 4.16).

Table (4.16)

Post hoc comparisons of the statistical significant differences of use by disease

Multiple Comparisons (Scheffe)						
Coping Style	**Disease**	**Disease**	**Mean Difference**	**Sig.**	**95% Confidence Interval**	
					Lower Bound	**Upper Bound**
Optimistic	Cardiac Group	DM Group	0.10	0.44	-0.09	0.28
		Mixed Group	-0.10	0.41	-0.30	0.09
	DM Group	Cardiac Group	-0.10	0.44	-0.28	0.09
		Mixed Group	-0.20	**0.05**	-0.40	0.00
	Mixed Group	Cardiac Group	0.10	0.41	-0.09	0.30
		DM Group	0.20	**0.05**	0.00	0.40

Differences in Effective Coping Strategies by Prevalent Chronic Illnesses

All three groups felt the most effective coping strategy was *Prayed or put your trust in God (Supportant).* However, they differed in their perception about which other two coping strategies were most effective. Both the cardiac and mixed group felt the *Relaxation technique (Palliative)* was one of the most effective. The cardiac subjects also included *Set up a plan of action (Confrontive),* while the DM subjects identified *Tried to think about the problem (Confrontive)* and *Talked the problem over with someone who had been in a similar situation (Supportant*), as the next two most effective coping strategies. The mixed group subjects included *Thought about the good things in your life (Optimistic)* (Appendices G, H, and I).

The comparison of differences in perceived effectiveness of coping strategies by the cardiac, DM, and mixed groups were evaluated using an ANOVA test. Six strategies statistically differed by disease. These strategies were *Worried about the problem (Emotive)* (F = 5.11, df, 2 p = 0.01), *Used relaxation techniques (Palliative)* (F = 3.06, df, 2 p = 0.05)**;** *Slept more than usual (Palliative)* (F = 5.02, df, 2, p = 0.01); *Tried to distract yourself by doing something that you enjoy (Palliative)* (F = 4.84, df, 2, p = 0.01); *Set up a plan of action (Confrontive)* (F = 6.39, df, 2, p = 0.00); and *Thought about the good things in your life (Optimistic)* (F = 6.16, df, 2, p = 0.00).

The results of the six statistically different coping strategies were further analyzed to determine specific differences among the three disease categories. The post-hoc comparisons Scheffe test revealed that there were statistically significant differences in perceived effectiveness of *Worried about the problem* between the DM and cardiac groups (p = 0.01); *Slept more than usual* between the cardiac and DM groups (p = 0.01); *Tried to distract yourself by doing something that you enjoy* between the cardiac and DM groups (p = 0.01); *Set up a plan of action* between the cardiac and DM groups (p = 0.01); and between the cardiac and mixed groups (p = 0.05); and *Thought about the good things in your life* between the mixed and cardiac groups (p = 0.00); and between the mixed and DM groups (p = 0.03). Although the perceived effectiveness of *Used relaxation techniques* was statistically significant, Post hoc comparisons did not reveal any statistically significant differences between the groups.

Differences in Effectiveness of Coping Styles among Prevalent Chronic Illnesses

All three groups of chronic illnesses identified *Supportant* as the most effective coping style. The cardiac and DM groups listed *Palliative* as the next most effective coping

styles. The cardiac and mixed groups included *Optimistic*, while the DM and mixed group both listed *Confrontive* as one of the top three coping styles (Table 4.7).

Similarly, the differences in effectiveness were tested by disease using an ANOVA test. There were statistically significant differences in the *Evasive* (F = 4.88, df 2, p= 0.01) and *Emotive* (F= 3.1 df 2, p = 0.05) coping styles (Table 4.17).

Table (4.17)

ANOVA of effectiveness of Jalowiec Coping Scale coping styles by disease category

ANOVA						
Coping Styles		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Confrontive	Between Groups	0.56	2	0.28	0.80	0.45
	Within Groups	61.28	176	0.35		
	Total	61.83	178			
Evasive	Between Groups	2.87	2	1.44	4.88	**0.01**
	Within Groups	52.71	179	0.29		
	Total	55.59	181			
Optimistic	Between Groups	1.26	2	0.63	2.11	0.12
	Within Groups	54.13	181	0.30		
	Total	55.39	183			
Fatalistic	Between Groups	0.17	2	0.09	0.17	0.84
	Within Groups	88.47	173	0.51		
	Total	88.64	175			
Emotive	Between Groups	3.04	2	1.52	3.10	**0.05**
	Within Groups	81.31	166	0.49		
	Total	84.35	168			
	Between Groups	0.08	2	0.04	0.12	0.89

ANOVA						
Coping Styles		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Palliative	Within Groups	57.03	178	0.32		
	Total	57.10	180			
Supportant	Between Groups	0.07	2	0.04	0.14	0.87
	Within Groups	46.86	181	0.26		
	Total	46.93	183			
Self-Reliant	Between Groups	0.71	2	0.35	1.01	0.37
	Within Groups	62.86	179	0.35		
	Total	63.57	181			
Overall JCS	Between Groups	0.85	2	0.42	2.19	0.12
	Within Groups	35.06	181	0.19		
	Total	35.91	183			

A post-hoc comparison Scheffe test revealed that there was a statistically significantly difference, with *Evasive* coping style higher in the mixed group subjects (p = 0.01). There was a statistically significant difference between the cardiac group and the DM group in the perceived effectiveness of *Emotive* coping style (p = 0.04, with *Emotive* coping style being higher in the cardiac Group (Table 4.18).

Table (4.18)

Post hoc comparison of the statistical significant differences in coping styles effectiveness by disease

Multiple Comparisons (Scheffe)

Coping Styles	Disease	Disease	Mean Difference	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Evasive	Cardiac Group	DM Group	0.14	0.34	-0.09	0.38
		Mixed Group	-0.19	0.17	-0.43	0.06
	DM Group	Cardiac Group	-0.14	0.34	-0.38	0.09
		Mixed Group	-0.33	**0.01**	-0.59	-0.07
	Mixed Group	Cardiac Group	0.19	0.17	-0.06	0.43
		DM Group	0.33	**0.01**	0.07	0.59
Emotive	**Cardiac Group**	**DM Group**	-0.31	**0.05**	-0.63	0.00
		Mixed Group	-0.10	0.76	-0.43	0.23
	DM Group	**Cardiac Group**	0.31	**0.05**	0.00	0.63
		Mixed Group	0.22	0.31	-0.13	0.56
	Mixed Group	Cardiac Group	0.10	0.76	-0.23	0.43
		DM Group	-0.22	0.31	-0.56	0.13

An ANOVA test showed there were no statistically significant differences in the effectiveness of either *Emotional-focused* or *Problem-focused* coping strategies by disease categories.

Question number four: ***Are there differences in coping strategies used by older adults who suffer from one chronic illness, compared to those who suffer from two or more chronic illnesses?***

Differences in used coping strategies between groups with one chronic illness and more than one chronic illness

Subjects with one chronic illness and subjects with two or more chronic illnesses both used *Prayed or put your trust in God* (*Supportant* coping style) as their number one *coping strategy* (appendices P and Q). Subjects with one chronic illness identified their other two most frequently used coping strategies as *Ate or smoked more than usual (Palliative)*, and *Worried about the problem* (*Emotive*), (Appendix P). The subjects with two or more chronic illnesses identified their other two most frequently used coping strategies as *Thought about the good things in your life (Optimistic),* and *Worried about the problem* (*Emotive*) (Appendix Q).

The results of an independent t-test showed statistical differences for two coping strategies. The two coping strategies that were statistically different, with 95% CI, were *Thought out different ways to handle the situation* (*Confrontive*) (1.74 ± 0.71 for subjects with one chronic illness and 2.09 ± 0.78 for two or more chronic illnesses, $p = 0.04$), and *Thought about how you had handled other problems in the past (Self-reliant)* (1.74 ± 0.62 for subjects with one chronic illness and 2.08 ± 0.73 for two or more chronic illnesses, $p = 0.04$) (Table 4. 19).

Table (4.19)

t-test of Jalowiec Coping Scale coping strategies use by comorbidity

Coping Strategies	t	Df	Mean Difference	95% Confidence Interval of the Difference		Sig. (2-tailed)
				Lower	Upper	
Thought out different ways to handle the situation	-2.08	127	-0.35	-0.68	-0.02	0.04
Thought about how you had handled other problems in the past	-2.04	108	-0.34	-0.67	-0.01	0.04

Differences in used coping styles between groups with one chronic illness and more than one

Subjects in both groups identified *Supportant*, *Emotive*, and *Fatalistic* as the top three most used coping styles (Table 4.20). The differences in mean values of use of eight coping styles between subjects who suffer from one chronic illness and subjects who suffer from two or more chronic illnesses were evaluated using an independent t-test. There were no statistically significant differences in the overall use and in the eight coping styles of JCS.

Table (4.20)

Means ± (SD) of the used Jalowiec Coping Scale coping styles by number of chronic illnesses

Coping Styles	Comorbidity			
	Subjects with one chronic illness (n = 47)		Subjects with two or more chronic illnesses (n = 137)	
	n	Mean (±SD)	N	Mean (±SD)
Confrontive	45	1.96 (± 0.54)	134	1.90 (± 0.56)
Evasive	47	2.06 (± 0.48)	135	2.01 (± 0.44)
Optimistic	47	2.10 (± 0.39)	137	2.10 (± 0.45)
Fatalistic	44	**2.11 (± 0.62)***	132	**2.13 (± 0.59)**
Emotive	44	**2.16 (± 0.62)**	125	**2.16 (± 0.58)**
Palliative	47	2.02 (± 0.54)	134	1.97 (± 0.45)
Supportant	47	**2.27 (± 0.40)**	137	**2.26 (± 0.44)**
Self-Reliant	45	1.98 (± 0.48)	137	1.95 (± 0.55)
Overall JCS	47	2.08 (± 0.33)	137	2.05 (± 0.35)

* The three highest means are in bold

Perceived Effectiveness of Effective Coping Strategies between groups with one chronic illness and more than one.

Similar to the *use* results for JCS Part A assessment, JCS Part B assessment indicated that the subjects in both groups perceived the most effective coping strategy to be *Prayed or put your trust in God* (*Supportant*). However, they differed in their thinking about which other two coping strategies were most effective. The subjects with one chronic illness included *Avoided being with people (Evasive),* and *Tried to work out a compromise (Confrontive).* Subjects with two or more chronic illnesses included *Tried to find out more about the problem (Confrontive), and Used relaxation techniques (Palliative)* (Appendices R and S).

The results of an independent t-test showed statistical differences for the perceived effectiveness of six coping strategies. The six coping strategies that were statistically different, with 95% CI, were *Kept your feelings to yourself (Self-reliant)* (1.35 ± 0.61 for subjects with one chronic illness and 1.69 ± 0.86 for two or more chronic illnesses, p = 0.05); *Told yourself that the problem was someone else's fault (Evasive)* (0.60 ± 0.70 for subjects with one chronic illness and 1.20 ± 0.82 for two or more chronic illnesses, p = 0.04); *Tried to work out a compromise (Confrontive)* (2.20 ± 0.62 for subjects with one chronic illness and 1.84 ± 0.73 for two or more chronic illnesses, p = 0.04); *Did something impulsive or risky that you would not usually do (Emotive)* (0.60 ± 0.70 for subjects with one chronic illness and 1.39 ± 0.94 for two or more chronic illnesses, p = 0.02); *Blamed yourself for getting into such a situation (Emotive)* (0.81 ± 0.83 for subjects with one chronic illness and 1.25 ± 0.78 for two or more chronic illnesses, p = 0.05); and *Avoided being with people (Evasive)* (2.33 ± 0.91 for subjects with one chronic illness and 1.68 ± 0.95 for two or more chronic illnesses, p = 0.01) (Table 4.21).

Table (4. 21)

t-test of Jalowiec Coping Scale coping strategies use by comorbidity

Coping Strategies	t	df	Mean Difference	95% Confidence Interval of the Difference		Sig. (2-tailed)
				Lower	Upper	
Kept your feelings to yourself	-1.99	125	-0.33	-0.66	0.00	0.05
Told yourself that the problem was someone else's fault	-2.15	52	-0.60	-1.17	-0.04	0.04
Tried to work out a compromise	2.05	106	0.36	0.01	0.71	0.04
Did something impulsive or risky that you would not usually do	-2.38	31	-0.79	-1.47	-0.11	0.02
Blamed yourself for getting into such a situation	-1.97	69	-0.44	-0.89	0.00	0.05
Avoided being with people	2.56	73	0.65	0.14	1.15	0.01

Differences in Effective Coping Styles between Groups with One Chronic Illness and More than One

Subjects in both groups perceived *Supportant*, *Palliative,* and *Confrontive* as the three most effective coping styles (Table 4.22).

Table (4.22)

Means ± (SD) of the effectiveness of Jalowiec Coping Scale coping styles by number of chronic illnesses

	Comorbidity			
	Subjects with one chronic illness (n= 47)		**Subjects with two or more chronic illnesses (n= 137**	
Coping Style	**n**	**Mean (±SD)**	**N**	**Mean (±SD)**
Confrontive	45	**1.82 (±0.54)***	134	**1.75 (± 0.61)**
Evasive	47	1.37 (± 0.57)	135	1.49 (± 0.55)
Optimistic	47	1.77 (± 0.49)	137	1.78 (± 0.57)
Fatalistic	44	1.24 (± 0.71)	132	1.44 (± 0.71)
Emotive	44	0.68 (± 0.71)	125	0.93 (± 0.70)
Palliative	47	**1.84 (± 0.60)**	134	**1.75 (± 0.55)**
Supportant	47	**2.05 (± 0.50)**	137	**2.06 (± 0.51)**
Self-Reliant	45	1.55 (± 0.57)	137	1.64 (± 0.60)
Overall JCS	47	1.61 (± 0.390)	137	1.66 (± 0.46)

* The three highest means are in bold

The differences in mean values of effectiveness of overall and eight coping styles were evaluated using an independent t-test. The only statistically significant difference was in the *Emotive coping* style (t = -2.00 df, 167, p = 0.05); subjects with two or more co-morbidities identified an *Emotive* coping style to be more effective than subjects with one chronic illness (Table 4.23).

Table (4.23)

t-test of the effectiveness Jalowiec Coping Scale coping styles effectiveness between subjects with one chronic illness and subjects with two or more comorbedities

Coping styles	t	Df	Mean Difference	95% Confidence Interval of the Difference		Sig. (2-tailed)
				Lower	Upper	
Confrontive	0.73	177	0.07	-0.13	0.27	0.47
Evasive	-1.32	180	-0.12	-0.31	0.06	0.19
Optimistic	-0.01	182	0.00	-0.19	0.18	0.99
Fatalistic	-1.57	174	-0.19	-0.44	0.05	0.12
Emotive	-2.00	167	-0.25	-0.49	0.00	0.05*
Palliative	0.93	179	0.09	-0.10	0.28	0.36
Supportant	-0.03	182	0.00	-0.17	0.17	0.97
Self-Reliant	-0.88	180	-0.09	-0.29	0.11	0.38
Overall JCS	-0.67	182	-0.05	-0.20	0.10	0.50

* p = 0.05

Subjects from one chronic illness and multiple chronic illness groups *used Emotional-focused* strategies more than *Problem-focused* strategies. They considered *Problem-focused* strategies to be more effective, but the differences were not statistically significant.

In summary, although, subjects with one chronic illness and subjects with two or more chronic illnesses used relatively similar coping styles, subjects with two or more chronic illnesses perceived the *Emotive* coping style as more effective. Subjects in both groups used *Prayed or put your trust in God* (*Supportant* coping style) as their number one coping strategy. They also perceived this strategy as the most effective.

Summary

Subjects in all three groups, both men and women, used *Prayed or put your trust in God* as their number one coping strategy, and also perceived it as the most effective coping strategy, with no statistical differences. All three disease groups, both men and women, identified *Supportant* and *Emotive* as the top two most used coping styles, with no statistical differences. However, the use of coping styles that were statistically different included *Evasive* and *Self- reliant,* both of which were used more by men than women. Additionally, there were statistical differences in the use of *Emotional-oriented* strategies, again with men using them more than women.

When evaluating prevalent chronic diseases, the only statistically significantly different coping style used was *Optimistic,* with mixed group subjects using it more than the DM group subjects. However, there were statistically significant differences in the perceived effectiveness of the *Evasive* coping style between the DM group and the mixed group, with *Evasive* higher in the mixed group subjects. The *Emotive* coping style was perceived to be more effective by the cardiac group than the DM group. There were no statistically significant differences in either the use or the perceived effectiveness of either *Emotional* or *Problem-focused* coping strategies by the three disease groups.

Subjects with one chronic illness and subjects with two or more chronic illnesses identified *Supportant*, *Emotive*, and *Fatalistic* as the top three most used coping styles, while they perceived *Supportant*, *Palliative,* and *Confrontive* as the three most effective coping styles. The only statistically significant difference was in the perceived effectiveness of *Emotive* coping; subjects with two or more co-morbidities perceived an *Emotive* coping style to be more effective than subjects with one chronic illness. Moreover, subjects in both groups *used Emotional-focused* strategies more than *Problem-focused* strategies. They considered *Problem-focused* strategies to be more effective, but the differences were not statistically significant.

Chapter Five

Discussion

The purpose of this study was to describe the coping strategies used by older Jordanian adults to cope with the most prevalent chronic illnesses. This study aimed specifically to investigate the strategies used by older Jordanian adults to cope with chronic illnesses, explore gender differences in coping strategies used by older male and female patients, to assess differences in coping strategies used by older adults based on the most prevalent chronic illnesses, and differences in coping strategies used by older adults who suffer from one chronic illness, compared to those who suffer from two or more chronic illnesses. This study was guided by Lazarus and Folkman's (1984) cognitive theory of stress and coping. This theory provided a guide to understand the importance of the current study findings, since the Jalowiec Coping Scale (JCS), which was used for data collection, was based on this theory. Subjects tended to use a wide range of coping strategies to cope with stressful encounters. The 60 specific coping strategies of the Jalowiec Coping Scale (JCS) form 8 coping styles. Each of Jalowiec's coping strategies can be further identified as either *Emotional-focused*, which is less effective in changing circumstances, or *Problem-focused*, which identifies ways to resolve issues related to effective coping.

This chapter discusses the research findings from the study. It reviews the results in the context of the existing literature on coping with chronic illness. Conclusions, implications and recommendations for nursing practice, education, and further research will be presented.

The coping strategies used by older Jordanian adults to cope with chronic illnesses

Subjects in the Cardiac group, the Diabetes (DM) group, and the Mixed group all used *Prayed or put your trust in God* (*Supportant* coping style) as their number one coping strategy. This finding is expected, since Jordanian people in general and particularly older adults tend to adhere to religious practices in all times. They have very high faith in Allah (God) even when not in crisis or under stress. Islam has defined practices that influence every essential activity people perform in their lives. These practices are considered a way of life that guide physical, emotional, social, moral, economical, political, and spiritual aspects of everyday activities (Akhter, 2009). In a recent qualitative study by Nabolsi and Carson (2011), Jordanian Muslim men living with coronary artery disease reported that faith facilitated their acceptance of their disease and enhanced their coping strategies, seeking medical treatment did not conflict with their belief in fate, spirituality enhanced their inner strength, hope and acceptance of self-responsibility and it helped them to find meaning and purpose in their life. Furthermore, the findings of the present study supported the findings of previous studies which reported that *Prayer or put trust on God* was among the most used coping strategies (Hosseini *et al.*, 2010; Loeb *et al.*, 2003; Tak, 2006; Taleghani *et al.,* 2006; Taleghani *et al.,* 2008; Narayanasamy, 2002). Lazarus and Folkman (1984) stated that Faith in God, fate, or some natural order in the universe, are general beliefs that enable people to create meaning out of life, even out of damaging experiences, and to maintain hope (Lazarus and Folkman, 1984).

The cardiac group subjects' second most frequently used coping strategies were: *Got mad and let off steam* (*Emotive*), and *Set up a plan of action* (*Confrontive*). These findings were different from the findings of previous studies; Cronqvist *et al.,* (2000) found that Swedish cardiac patients used *Tried to think positively* (*Optimistic*), *Tried to handle things one step at a time* (*Confrontive*), and *Tried to keep the situation under control* (*Confrontive*); Tung *et al.,* (2009) found that patients used *Problem focused* and *Seeking help* more than *Wishful and Avoidance coping* strategies. Cortis and Williams (2007) found that British older adults with heart failure used *Stoicism* and *Acceptance* coping strategies to cope with the many problems of heart failure and advancing age; and Fox-Wasylyshya, EL-Masri & Krohn, (2007) found that patients used *Trying to relax* and *Wishing or praying that the symptoms would go away*. The differences in coping strategies used by cardiac subjects in the present study and subjects in the previous studies may be attributed to cultural differences. Most of the previous studies were done in developed countries where the patient plays a significant role in the management of his chronic illness; in Jordan most of the time, patients tend to be passive recipients of the health care services.Meleis and Jonsen (1983) stated that choosing from alternatives, and taking responsibility of one's actions is popular in Western culture but foreign to Arab culture.

The DM group subjects' second most frequently used coping strategies were: *Worried about the problem* (*Emotive*), and *Told yourself that things could be much worse* (*Optimistic*). These findings were inconsistent with Tuncay et al.'s study (2008) which found that the most commonly used coping strategies by Turkish DM patients were *Acceptance, Religion,* and *Planning*, although the qualitative findings of this study indicated that subjects sometimes used *Self-distraction and Venting*. Similar to cardiac

subjects, the differences in coping strategies used by DM group subjects in the present study and subjects in the previous studies may be attributed to cultural and religious differences.

The mixed group subjects' second most frequently used coping strategies were: *Ate or smoked more than usual* (*Palliative*), and *Thought about the good things in your life* (*Optimistic*). The burden of living with two chronic illnesses might explain the use of these coping strategies. Subjects in the mixed group might feel lack of control of their situation so they try to distract themselves through doing things (eating and smoking) to make them feel better and to think positively about their situation. No previous studies were found that assessed coping strategies of subjects with both cardiac and DM diseases.

One of the three most used coping strategies in the cardiac and DM groups belongs to the *Emotive* coping style, which implies that a commonly used method to cope with chronic illness is to do things to avoid confronting the problem. Ahlström & Wennenberg (2002) reported similar findings when they reported that patients used *Distancing* as a coping strategy. On the other hand, many previous studies reported a wide range of different coping strategies such as; *Keeping a sense of humor*, *Look at the good side* and *Think positively* (Logan, Pelletier-Hibbert & Hodgins, 2006); *Concentrating on what to do next* (Andenæs, Kalfoss, & Wahl, 2006); and *Acceptance* (Delmar *et al.,* 2005). One possible explanation for the wide range of differences in the most common used coping strategies by the subjects of this study and subjects of other previous studies is the differences of patient characteristics, and differences in the cultural context that may encourage the adoption of specific coping strategies. Mok & Tam, (2001) stated that coping and learning to live with chronic illness is culturally based. The methods of coping of a specific cultural group can only be understood within their cultural context.

In the present study subjects in the three disease groups identified *Supportant* and *Emotive* as the top two most used coping styles. One explanation for the use of *Supportant* may be the cohesive nature of the family in Jordan. Another possible explanation might be the social obligation for the common good among Jordanians people especially at times of sickness or death in families. A third possible explanation is that the vast majority of older adults live with a spouse, children, or relatives who could provide assistance and support when needed. Subjects in the three groups used the available support system of families, friends, and the religious support system to help them cope with chronic illness. In Islam, when Muslim parents reach old age, they are treated mercifully, with kindness and selflessness. Jordanian older adults turn to available family and social support resources as a method of coping with their chronic illness. For instance, in Islamic cultures such as Jordan, one rarely finds "old people's homes. Older adults expect to receive care from their family members and relatives. Serving one's parents is a duty second to prayer, and it is their right to expect it. It is considered despicable to express any irritation when, through no fault of their own, the old become difficult.

God has said:

> **﴾Your Lord has commanded that you worship none but Him, and that you be kind to your parents. If one of them or both of them reach old age with you, do not say to them a word of disrespect, or scold them, but say a generous word to them. And act humbly to them in mercy, and say, "My Lord, have mercy on them, since they cared for me when I was small."﴿**
> (Quran, 17:23-24)

Prophet Mohammad (PBUH) said "Heaven would be found under the feet of one's mother". Therefore, the care of the elderly is regarded as an avenue to Heaven, another expression of worship".

Moreover, using *Emotive* coping style through releasing emotions may indicate that coping efforts were directed at regulating emotional response to their chronic illness. Lazarus & Folkman (1984) stated that lack of control over the most significant aspects of the situation will encourage the use of strategies for regulating emotions; direct problem-focused actions may have to await suitable opportunities.

These findings were inconsistent with findings of studies that assessed coping styles of older adults with different chronic conditions. For instance, patients with lung cancer (Downe-Wamboldt *et al.,* 2006), patients after kidney transplant (Lindqvist, Carlsson & Sjödén, 2004), and hemodialysis patients (Logan, Pelletier-Hibbert & Hodgins, 2006) most frequently used *Optimistic, Self-reliant* and *Supportant* coping styles; COPD patients used *Optimistic* (Frey, 2000); patients with epilepsy used *Palliative, Active confronting*, and *Avoidance;* and COPD patients used *Fatalistic, Palliative* ,and *Supportant* (Yuet, Alexander, & Chun, 2002). The possible explanations for the differences might be linked to the differences in the nature of different chronic conditions and the differences in the sample characteristics.

The cardiac group subjects in the presents study used coping styles that differ largely from styles reported by previous studies; patients with Myocardial infarction (Kristofferzon, Lofmark & Carlsson, 2005a; Kristofferzon, Lofmark & Carlsson, 2005b), and patients post PTCA (Cronqvist *et al.,* 2000) mostly used *Optimistic, Self-reliant* and *Confrontive* coping styles. These differences might be explained by the differences between patients in these studies and patients in the present study. The previous studies were carried out in developed countries where the patients use a wide range of available coping resources. The positive attitude of these patients toward their illness might have helped them to select coping strategies that value self-management and confronting the problem.

Lazarus and Folkman (1984) indicated that coping resources include physical resources such as health and energy, psychological resources such as positive beliefs and problem-solving and social skills combined with environmental resources such as monetary resources and social support are considered important in facilitating coping efforts. Of these coping resources, Jordanian patients might have better social support and positive beliefs that stem from their religion. But in Jordan there is a lack of community health care services and the focus on these services is limited, on the other hand Western countries compensate for the lack of social support through wide range of community health care services that provide care for older adults in the community. Additionally, patients in Western countries are expected to have an active role in the decisions related to their disease management; consequently *Self-reliant* and *Confrontive* coping styles would be appropriate. Moreover, differences in the primary appraisal might explain the differences in coping styles used; subjects in the presents study might appraise their chronic illnesses as irrelevant which means that encounter with environment carries no implication for a person's well being

Many previous studies showed contradicting coping findings for patients with DM. Findings of three studies showed that DM patients used passive forms of coping; Coelho, Amorim and Prata (2003) reported that Portuguese DM patients used *Avoidance* coping styles rather than using *Active confrontation* coping styles; Samuel-Hodge et al. (2008) reported that African American DM patients used *Passive* and *Emotive coping styles;* while Gåfvels and Wändell (2007) stated that foreign born DM patients used more *Fatalism*, *Resignation*, and *Protest* coping styles than Swedish patients. The similarity of these findings and the findings of the present study is in the use of passive forms of coping and in the adoption of more *Emotion–focused* coping strategies. This finding might be attributed

to the similarity of the characteristics of foreign born DM subjects with the characteristics of subjects in the present study.

On the other hand many studies showed that DM patients used different coping styles from those used in the present study. Searle *et al.* (2007) reported that DM patients used the *Confrontational* coping style; Willoughby *et al.,* 2000a; and Willoughby, Kee & Demi, 2000b reported that women with DM used *Optimistic, Confrontive*, and *Self-reliant*; while Tuncay *et al.,* (2008) reported that Turkish patients with DM used *Acceptance, Religion,* and *Planning.*

Subjects from all three groups in the current study used *Emotional-focused* strategies more than *Problem-focused* strategies. These findings were supported by Searle *et al.* (2007) who reported that a combination of *Problem-focused* and *Emotional-focused* coping styles were used rather than a single strategy. The possible explanation of using more *Emotion-focused* strategies might be explained by the patients' feeling of lack of control over the most significant aspects their chronic illnesses will encourage them to use strategies for regulating emotions; direct *Problem- focused* strategies may have to await suitable opportunities on subsequent reappraisals. Lazarus and Folkman (1984) indicated that people usually tend to use *Emotion* and *Problem-focused* coping strategies. When the encounter with the environment is evaluated as stressful in the primary appraisal, people may use *Emotion-focused* strategies in the beginning before they explore the available coping resources and before subsequent reappraisals provide additional information that dictate the need to use *Problem-focused* strategies.

Subjects from all three groups in the present study felt the most effective coping strategy was *Prayed or put your trust in God (Supportant).* This strategy was also the most commonly *used* strategy by subjects in the three disease groups. One possible

explanation for the above findings is that in Islam, people are expected to be satisfied and thank God for every thing he provides. Islam means submission to the will of Almighty God, who is the sole creator of the humankind and the universe. There are citations in the *Quran* that emphasize worshipping Allah (SWT) and suggest that being close through prayer is the best way to overcome depression, anxiety, helplessness, and disappointment. In the *Quran*, God says, "I reveal the *Quran* that which is a healing and mercy for the believers" (*Quran* chapter17, verse 82). Prayer is considered as a way to be close to Allah (God) and it helps in acceptance of the illness as a God's will. In Islam true believers always praise Allah (SWT) for any events, encountered during their lives, such as those related to health, money, physical harm, life crisis, financial loss, or other events that impact their physical and social well-being. They accept these with patience and prayer and submit their will to Allah (SWT). Illness and suffering at are believed to be a test to a believer; a test of his/her faith, and a purifying process from sins, especially if the patient went through prolonged suffering and accepted that with patience and praise to God.

Both the cardiac and mixed group felt the *Relaxation technique (Palliative)* was one of the most effective. The use of this coping strategy might have helped the subjects to feel better through reduction of their stress levels which may lead to better outcomes of DM and cardiac diseases. The cardiac subjects also included *Set up a plan of action (Confrontive),* while the DM subjects identified *Tried to think about the problem (Confrontive)* and *Talked the problem over with someone who had been in a similar situation (Supportant*), as the next two most effective coping strategies. The mixed group subjects included *Thought about the good things in your life (Optimistic).*

These findings were different from two studies who reported that the most effective coping strategies were *Tried to think positively* (*Optimistic*), *Tried to handle things one step at a time* (*Confrontive*), and *Tried to keep the situation under control* (*Confrontive*)

(Cronqvist *et al.,* 2000), and *Problem-focused* and *Seeking help* (Tung *et al.,* 2009). One possible explanation of these finding is that these studies were done in developed western countries in which patients tend to think positively about the available resources and possible alternatives to manage their chronic illnesses. Lazarus (1993) stated that a successful person in with western life style values is expected to be active, happy, and individualistic.

All three groups of older Jordanians with chronic diseases identified *Supportant* as the most effective coping style. The cardiac and DM groups listed *Palliative* as the next most effective coping styles. The cardiac and mixed groups included *Optimistic*, while the DM and mixed group both listed *Confrontive* as one of the top three coping styles. These coping styles were a combination of *Emotion-focused* and *Problem- focused* coping styles. One study reported that a *Supportant* coping style was one of the three most effective coping styles after *Optimistic,* and *Confrontive* (Jalowiec, Grady & White-Williams, 2007). Other studies showed that *Optimistic* was the most effective (Frey, 2000; Logan, Pelletier-Hibbert & Hodgins, 2006) or one of the three most effective coping styles with *Confrontive*, *Optimistic*, and *Self-reliant* (Cronqvist *et al.,* 2000). Some subjects in the present study identified *Optimistic* and *Confrontive* coping styles as two of the three effective coping styles, which is consistent with previous studies. This indicates that although subjects in the present study did not identify *Optimistic* and *Confrontive* coping styles as the number one effective styles, they identified these styles in the top three. Moreover, these styles were not the most frequently used, which pose an important question; why did subjects in the present study use one form of coping, but think another was more effective. A tentative answer to this question might be because subjects did not critically think of what strategies they used to cope with their illness, before it was asked in the present study. As they

reflected on the questions, they found that the most frequently used methods of coping did not yield the optimum outcomes, and some other methods of coping were more effective.

Since the subjects in the current study were older Jordanians, for whom education, critical evaluation, and self-directed health care were not cultural norms, they may have accepted their illness and directions for health care directions as the way things are, as the patients in Jordan, especially older adults, tend to be passive recipients of health care services; it is expected that they do not ask to take part in decisions related to the management of their illnesses; Jordanian patients trust physicians; they expect them to take care of them as if they would for their relatives with love and understanding. Moreover, family members especially the eldest son or husbands tend to participate in any decisions related to the older adult health. Consequently, older adult patients will probably not explore the available coping options.

Subjects from all the three disease groups considered *Problem-focused* strategies to be more effective. This implies that critical evaluation during the study helped them identify coping strategies that might be more (*Problem-focused*) in contrast to what they stoically used for coping. This is clinically significant, but not statistically significant. Many previous studies support this finding (Cronqvist *et al.,* 2000; Jalowiec, Grady and White-Williams, 2007; Frey, 2000; Logan, Pelletier-Hibbert & Hodgins, 2006). The subjects positive beliefs about the specific coping options, the ability to overcome barriers to choose these options and the availability of personal resources such as problem solving and social skills, and environmental resources such as monetary resources and social support, will influence what coping method the subjects use (Lazarus and Folkman, 1984).

Summary

Subjects in all disease groups used *Prayed or put your trust in God (Supportant)* as the number one coping strategy used. This coping strategy was also identified as the most effective one. The findings of this study were quite different from findings of previous studies, especially studies that were carried out in Western developed countries where patients used more *Problem-focused* coping strategies. Moreover, subjects in this study used *Supportant* style most frequently and considered it as most effective. Findings of this study indicated that Jordanian older adult patients with chronic illness tended to turn to religion and social support as a source of coping.

Are there gender differences in coping strategies used by older male and female patients?

Both men and women listed *Prayed or put your trust in God (Supportant)* as their most frequently used *coping strategy*. The second two most frequent coping strategies used by men were: *Got mad and let off steam (Emotive)*, and *Told yourself that things could be much worse* (*Optimistic*).The second most frequently used coping strategies used by women were: *Worried about the problem (Emotive)*, and *Thought about the good things in your life (Optimistic)*.

These findings showed that both men's and women's most commonly used coping strategies belong to the *Supportant*, *Emotive*, and *Optimistic* coping styles. Moreover, findings showed statistically significant differences for five coping strategies; specifically men used more of these coping strategies; *Tried to get away from the problem for a while (Evasive)*; *Got mad and let off steam (Emotive); Tried to put the problem out of your mind and think of something else (Evasive); Resigned yourself to the situation because things*

looked hopeless (Fatalistic); *and Preferred to work things out yourself (Self-reliant*).

(Table 5.1)

(Table 5.1)

Differences in the used coping strategies by gender

	Men	Women	
Coping Strategies	**Mean ± SD**	**Mean ± SD**	**p**
Tried to get away from the problem for a while	2.27 ± 0.73	1.80 ± 0.63	0.00**
Got mad and let off steam	2.40 ± 0.66	2.02 ± 0.84	0.00**
Tried to put the problem out of your mind and think of something else	2.20 ± 0.70	1.90 ± 0.72	0.01*
Resigned yourself to the situation because things looked hopeless	2.00 ± 0.70	1.59 ± 0.64	0.01*
Preferred to work things out yourself	2.10 ± 0.66	1.80 ± 0.79	0.01*

* $p < 0.5$ ** $p < 0.01$

The findings of the present study also indicated that men used more *Emotion- focused* forms of coping than women. These findings were inconsistent with finding of previous studies; Gåfvels & Wändell (2006) stated that Swedish women more often used more negative coping strategies such as *Resignation*, *Protest*, and *Isolation* than men; other studies reported that women used statistically significantly more *Self-blame* coping strategies than did men (St-Louis & Robichaud-Ekstrand, 2003; Tung, *et al.,* 2009); Bogg, Thortton and Bundred (2000) reported that women used more *Problem-focused, Emotional, and Avoidance* strategies than men; Sridhar *et al.,* (2007) stated Indian men coped better than women but Sridhar did not specify which coping strategies they used. Coelho, Amorim, and Prata (2003) reported that men had significantly higher scores than women

for the coping strategy of *Seeking alternative rewards*; Ninot *et al.,* (2006) found that men used more *Problem-focused* strategies and fewer *Emotion-focused* strategies than women.

The contradiction between findings of previous studies and findings in the present study needs further investigation, since men in the present study were expected to use more *Problem- focused* strategies than women, because women in Jordan are imagined as more emotional than men. The media has contributed largely to this stereotyped pictures that show women as emotional and men as strong who are not expected to show emotions. The Department of Statistics (DOS) (2010) reported that 8.4% of men and 39.7% of women in the age group of 50-64 years were illiterate; these percentages sharply increase to be 25.1 % of men and 71.9% of women older than 65 years. The high illiteracy rate among older adults in Jordan might provide explanation about why both men and women used *Emotional – focused* strategies but it did not explain why men used more *Emotion- focused*.

One possible explanation could be because more men reported family income below the poverty line. About half the men and a third of the women reported their family income was less than 300 JD, which is below the poverty line (323 JDs/month) (DOS, 2008). The low family income might explain that men used coping strategies that did not require any financial costs. Another explanation that might explain the use of *Emotional- focused* coping strategies by both men and women in the presence of at least one depressive symptom in approximately half of the subjects. Several studies have linked *maladaptive coping* methods with depression; Klein, Turvey and Pies (2007) reported that Maladaptive coping styles such as *Denial*, *Self-distraction*, *Behavioral disengagement*, *Venting of emotions*, and *Self-blame* were positively associated with depressive symptoms; Doering *et al.,* (2004) stated that *Avoidance coping style* was associated with significantly higher anxiety, anger, depression, confusion, and fatigue; Hallas et al. (2011) indicated that

depressed heart failure patients and patients with high levels of anxiety reported significantly more negative illness perceptions, and maladaptive coping styles, such as *Denial*, *Behavioral disengagement*, and *Venting emotions*.

In the present study both men and women identified *Supportant* and *Emotive as* the two most used coping styles. Men also included *Fatalistic,* while women included *Optimistic* as the third most used coping style. Men used statistically significant more *Evasive* and *Self- reliant* coping styles than women. These findings contradict the findings of Kristofferzon *et al.* (2005a) who reported that women with myocardial infarction used significantly more *Evasive* and *Supportive* coping compared with men. Another study indicated that women used significantly more *Palliative* coping strategies and the sum of all coping styles than did men (Degazon and Parker, 2007). Additionally, two studies found no significant gender differences in coping styles (Frey, 2000; Samuel-Hodge *et al.,* 2008).

In the present study, both men and women listed *Prayed or put your trust in God* (*Supportant*) as one of the three most effective strategies, which they also used more**.** In this study both male and female patients had high faith in God (Allah); this faith helped them to accept their chronic illnesses. In their secondary appraisal, they perceived the coping strategy *Prayed or put your trust in God* as a valuable coping resource. Praying five times a day is the core of worshiping Allah (SWT), and timely prayers help Muslims to meet their spiritual needs. Prayers keep patients feeling close to God (Allah) which may help them to overcome the physical and psychological burdens of chronic illness.

The second most perceived effective strategies identified by men were: *Used relaxation techniques* (*Palliative*), and *Tried to find out more about the problem* (*Confrontive*). Women included *Talked the problem over with someone who had been in a similar situation* (*Supportant*), and *Tried to keep a sense of humor* (*Optimistic*). These

coping strategies are related to *Supportant*, *Palliative*, *Confrontive*, and *Optimistic* coping styles.

In the present study, seven coping strategies were found to be statistically different in terms of men perceiving the following coping strategies as more effective than women; *Hoped that things would get better (Optimistic)*, *Kept your feelings to yourself (Self-reliant), Slept more than usual (Palliative)*, *Preferred to work things out yourself (Self-reliant)*; *and Avoided being with people (Evasive).* Women perceived *Got mad and let off steam (Emotive) and Put off facing up to the problem (Evasive*) as more effective than men (Table 5.2)

(Table 5.2)

Differences in the effectiveness of coping strategies by gender

	Men	**Women**	
Coping Strategies	**Mean ± SD**	**Mean ± SD**	**p**
Hoped that things would get better	2.02 ± 0.83	1.73 ± 0.80	0.03*
Got mad and let off steam	0.78 ± 0.95	1.22 ± 0.83	0.01*
Kept your feelings to yourself	1.72 ± 0.74	1.43 ± 0.90	0.05*
Slept more than usual	1.74 ± 0.90	1.16 ± 0.72	0.00**
Put off facing up to the problem	1.02 ±0.88	1.38 ± 0.63	0.02*
Preferred to work things out yourself	1.75 ± 0.80	1.43 ± 0.81	0.02*
Avoided being with people	2.02 ± 0.94	1.57 ± 0.97	0.05

* $p < 0.05$ ** $p < 0.01$

In addition, both men and women identified *Supportant* and *Palliative* as two of the three most effective coping styles. Men also identified *Confrontive* and women identified *Optimistic* as one of the three most perceived effective coping styles. These findings indicated that *using* available support systems, including the religious support system, and doing things to make themselves feel better, were perceived as effective coping styles by both men and women. Men also perceived constructive problem-solving, facing up to and confronting the problem as effective, while women perceived positive thinking or positive attitudes about the problem as effective coping styles. Only the *Supportant* coping style of the most frequently used coping styles was identified as effective by both men and women. Other identified styles were *Palliative*, *Confrontive*, and *Optimistic*. This might be because subjects did not critically think of what strategies they used to cope with their illness, before it was asked in the present study; they found that the most frequently used methods of coping did not yield optimum outcomes, and determined that other methods of coping were more effective. No previous studies that assessed the gender differences in the effectiveness of coping were found.

In this study men used more *Emotional- focused* and *Problem- focused* coping strategies than women. This finding was inconsistent with findings of previous studies; Bogg, Thortton, and Bundred (2000) reported that women used more *Problem-focused, Emotional, and Avoidance* strategies than men. Two other studies reported that women used statistically significantly more *Self-blame* which is a form of *Emotional-focused* coping strategies than did men (St-Louis & Robichaud-Ekstrand, 2003; Tung, *et al.,* 2009). Men also perceived *Emotional- focused* strategies to be more effective than women, but the difference was not statistically significant. This might be because subjects were unaware of what strategies they used to cope with their illness, before it was asked in the present study;

they discovered that the most frequently used methods of coping did not lead optimum outcomes, and determined that other methods of coping were more helpful.

Summary

In the present study, both men and women used *Prayed or put your trust in God* as their number one coping strategy; this strategy was also identified as the most effective. Moreover, both men and women patients in this study used *Supportant* as their number one coping style; this coping style was also identified as the most effective. Findings of this study were different from findings of studies that were carried out in developed countries, since Jordanian patients perceive faith in God and religion, and available support from family and society at large as significant coping resources. One of the findings of the present study indicated that men used significantly more *Emotion-focused* strategies than women which not only contradicted the findings of the previous studies, but also it contradicted the expectations that women tend to be more emotional.

Are there different coping strategies used by older adults based on the most prevalent chronic illnesses?

The findings of this study indicated that subjects in the three groups relatively used similar coping strategies. There were only nine coping strategies out of 60 showed statistically significant differences among subjects in the three disease groups; specifically most of the differences were between subjects in the mixed group and subjects in the DM group

The nine coping strategies that statistically differed by disease were *Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor) (Supportant)*, *Waited to see what would happen (Evasive)*, *Told yourself not to worry because everything would work out fine (Optimistic)*, *Tried to distract yourself by doing something that you enjoy (Palliative)*, *Told yourself that you could handle anything no matter how hard (Self-reliant)*, *Set up a plan of action (Confrontive)*, *Tried to keep a sense of humor (Optimistic)*, *Thought about the good things in your life (Optimistic)*, and *Practiced in your mind what had to be done (Confrontive)*. (Table 5.3) Three of these coping strategies are related to *Optimistic* coping style.

(Table 5.3)

Differences in coping strategies used by subjects by disease

Coping Strategies	**p**
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	0.00**
Waited to see what would happen	0.00**
Told yourself not to worry because everything would work out fine	0.02*
Tried to distract yourself by doing something that you enjoy	0.04*
Told yourself that you could handle anything no matter how hard	0.01 *
Set up a plan of action	0.02 *
Tried to keep a sense of humor	0.00 **
Thought about the good things in your life	0.01 *
Practiced in your mind what had to be done	0.05

* p < 0.05 ** < 0.01

Further analysis revealed that subjects in the mixed group used significantly more of the coping strategies of *Told yourself not to worry because everything would work out fine (Optimistic), Told yourself that you could handle anything no matter how hard (Self-reliant)*, *Tried to keep a sense of humor (Optimistic)*, and *Thought about the good things in your life (Optimistic)* than subjects in the DM group. Also, subjects in the mixed group used *Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor) (Supportant)* more than subjects in the cardiac group. Subjects in the cardiac group significantly used more *Waited to see what would happen (Evasive)* and *Set up a plan of action than* (*Confrontive*) subjects in the DM group. Subjects in the DM group significantly used *Tried to distract yourself by doing something that you enjoy* (*Palliative*) more than subjects in the DM group. The possible explanation of these findings might be because subjects in the mixed group, who have both cardiac diseases and DM, have learned to explore their coping resources that can be appraised to lead to better outcomes.

The only statistically significant coping style that differed by disease was *Optimistic* coping style. Further analysis revealed that subjects in the mixed group used more *Optimistic* coping style than DM group subjects. This finding might be interpreted because subjects in the mixed group felt that positive thinking is helpful in dealing with the burden of two chronic illnesses. One possible explanation of this finding might be that positive thinking and maintaining positive attitude might help subjects in the mixed group to explore the different coping alternatives. Logically we would expect people with two chronic illnesses to use less *Optimistic* coping style than those who have only one chronic illness. This would be true if we do not consider the religious or spiritual aspects of the situation; the patients' use of *Optimistic* coping style is a sign of acceptance of God's will and they will be rewarded in the afterlife as prophet Mohammad (PBUH) said:

"Whatever befalls a Muslim of exhaustion, illness, worry, grief, nuisance or trouble, even though it may be no more than a prick of a thorn, earns him forgiveness by Allah of some of his sins." (Al-Bokhari)

In the present study, the effectiveness of six coping strategies statistically differed by disease. These strategies were *Worried about the problem (Emotive)*, *Used relaxation techniques (Palliative)*; *Slept more than usual (Palliative)*; *Tried to distract yourself by doing something that you enjoy (Palliative)*; *Set up a plan of action (Confrontive)*; and *Thought about the good things in your life (Optimistic).* Three of these coping strategies were related to *Palliative* coping style. (Table 5.4)

(Table 5.4)

Differences in effectiveness of coping strategies by subjects by disease

Coping Strategies	P
Worried about the problem	0.01*
Used relaxation techniques	0.05
Slept more than usual	0.01*
Tried to distract yourself by doing something that you enjoy	0.01*
Set up a plan of action	0.00 **
Thought about the good things in your life	0.00**

* $p < 0.05$ ** $p < 0.01$

Further analysis revealed that subjects in the cardiac group significantly perceived the following coping strategies of *Slept more than usual,* and *Tried to distract yourself by doing something that you enjoy* to be more effective than subjects in the DM group, and *Set up a plan of action* more than subjects in DM and mixed groups. Subjects in the DM

group significantly perceived *Worried about the problem* to be more effective than subjects in the cardiac group. Subjects in the mixed group statistically perceived the coping strategy of *Thought about the good things in your life* to be more effective than subjects in the cardiac and DM groups. In the present study, subjects in the three disease groups had similar perceptions of the effectiveness of a majority of coping strategies. There were significant differences in six coping strategies out of the 60 in JCS Part B. These differences might be attributed to the nature of the chronic diseases; for instance, subjects in the cardiac group perceived *Slept more than usual* more effective than subjects in the DM group. Subjects in the DM group did not perceive sleeping as effective strategy as subjects in the cardiac group since the DM probably will have interrupted sleep because of nocturia, which is one of the symptoms of their disease.

In the present study there were significant statistical differences in the perceived effectiveness of two coping styles; *Evasive* and *Emotive* coping styles. Subjects in the in the mixed group significantly perceived the *Evasive* more effective than subjects in the DM group; and subjects in the cardiac group significantly perceived the *Emotive* more effective than subjects in the DM group. These findings indicated that subjects in the three disease groups felt a similar perception of the effectiveness of most of the coping styles in the JCS part B. The differences in the perceived effectiveness of the *Evasive* and *Emotive* coping styles by disease may be attributed to the nature of the chronic disease patients have. The subjects in the mixed group perceived *Evasive* as more effective than subjects in the DM group this might be linked to the lack of control of the burdens of two chronic illnesses that might be felt by subjects in the mixed group. Subjects in the cardiac group perceived *Emotive* as more effective than subjects in the DM group. The possible explanation of this finding might be because expressing emotions may reduce their stress. Also, subjects in the

cardiac group might perceive their illness as life threatening condition and they might have fear of death, on the other hand subjects in the DM group might perceive their illness as a condition that they can live with.

No previous studies were found in the literature that examined statistical differences in coping between patients with different chronic illnesses. The majority of previous studies, as reported in research questions one and two, tested coping of patients with one chronic illness.

Summary

Subjects in the three disease groups used relatively similar coping strategies, since there were only 9 used coping strategies out of the 60 in JCS part A that were found statistically different. The differences in these strategies can be attributed to the nature of the diseases. Findings also indicated that subjects in the mixed group used more *Optimistic* coping style than subjects in the DM group. Positive thinking and attitude might help subjects in the mixed group to accept and deal with the burden of two chronic illnesses. Similarly, the present study revealed there were statistical differences in the perceived effectiveness of 6 coping strategies out of the 60 on JCS part B. Furthermore, there were significant differences in the perceived effectiveness of two coping styles out of the eight coping styles on JCS part B. The differences in perceived effectiveness of the coping strategies and the styles might also be attributed to the differences in the nature of the diseases.

Are there differences in coping strategies used by older adults who suffer from one chronic illness, compared to those who suffer from two or more chronic illnesses?

In the present study subjects with one chronic illness and subjects with two or more chronic illnesses both used *Prayed or put your trust in God* (*Supportant* coping style) as their number one coping strategy, and *Worried about the problem* (*Emotive*) as one of their top three. Subjects with one chronic illness identified their other most frequently used coping strategy as *Ate or smoked more than usual (Palliative*). The subjects with two or more chronic illnesses other most frequently used coping strategy was *Thought about the good things in your life (Optimistic).* The findings indicated that subjects with both one and more than one chronic disease used the available support systems, including the religious support system. The use of other coping strategies related to *Emotive, Palliative,* and *Optimistic* coping styles might be explained by the tendency of subjects in both groups to express or release emotions because they might feel that little can be done; subjects with one chronic illness identified Ate *or smoked more than usual* because this may have helped them to feel better, while subjects with two or more chronic illnesses tended to think positively about their chronic illnesses.

All the most frequently used coping strategies were part of the *Emotion-focused* strategies. A previous study that assessed coping of older African American patients with multiple chronic conditions reported that *Spirituality* and/or *relying on religion* was one of the most frequently used coping strategies (Loeb et al., 2003). This is similar to the present study, but the other coping strategies that were used included *Seeking information, Exercising* and *changing dietary patterns, Relating with health care providers,* which were

different than the current study (Loeb et al., 2003). The differences in the findings might be attributed to the differences in the patients' characteristics and to the cultural differences between the patients' populations.

In the present study, subjects with two or more chronic illnesses significantly used the coping strategies of *Thought out different ways to handle the situation* (*Confrontive*), and *Thought about how you had handled other problems in the past (Self-reliant)*. These results indicated that subjects in both groups used relatively similar coping strategies, since the statistical difference was only in two of the 60 coping strategies. However, the two statistically different coping strategies belong to *Confrontive* and *Self-reliant* coping styles which are considered part of the *Problem-focused* coping strategies which necessitate using problem solving to confront the chronic illness and depending on self rather on depending on others.

Subjects in both groups perceived the most effective coping strategy to be *Prayed or put your trust in God* (*Supportant*), which they had also used. However, they differed in their thinking about which other two coping strategies were most effective. The subjects with one chronic illness included *Avoided being with people (Evasive),* and *Tried to work out a compromise (Confrontive).* Subjects with two or more chronic illnesses included *Tried to find out more about the problem (Confrontive), and used relaxation techniques (Palliative).* One possible interpretation of why subjects in both groups used one form, but thought another was more effective might be because the subjects initially after they perceived their encounter with the environment as stressful, they selected coping strategies from the available coping resources (secondary appraisal). The subjects did not critically think of what strategies they used to cope with their illness before it was asked in the present study; they may have discovered that the most frequently used strategies of coping

did not yield the optimum outcomes, and that some other methods of coping were more effective.

The findings indicated that the perceived effectiveness of copings strategies was relatively similar in the majority of coping strategies. There were statistically significant differences in the perceived effectiveness of only six coping strategies out of 60. Subjects with one chronic illness perceived the following coping strategies more effective than subjects with two or more chronic illnesses; *Tried to work out a compromise (Confrontive)* and *Avoided being with people (Evasive)*. On the other hand subjects with two or more chronic illnesses perceived the following coping strategies as more effective than subjects with one chronic illness; *Kept your feelings to yourself* (*Self-reliant)*; *Told yourself that the problem was someone else's fault (Evasive); Did something impulsive or risky that you would not usually do (Emotive)*; and *Blamed yourself for getting into such a situation (Emotive).* (Table 5.5)

(Table 5.5)

Differences in coping strategies identified as effective by subjects with one chronic illness and subjects with more than one chronic illness

	One	**> One**	
Coping Strategies	**Mean ± SD**	**Mean ± SD**	**p**
Kept your feelings to yourself	1.35 ± 0.61	1.69 ± 0.86	0.05*
Told yourself that the problem was someone else's fault	0.60 ± 0.70	1.20 ± 0.82	0.04*
Tried to work out a compromise	2.20 ± 0.62	1.84 ± 0.73	0.04*
Did something impulsive or risky that you would not usually do	0.60 ± 0.70	1.39 ± 0.94	0.02*

	One	> One	
Coping Strategies	**Mean ± SD**	**Mean ± SD**	**p**
Blamed yourself for getting into such a situation	0.81 ± 0.83	1.25 ± 0.78	0.05*
Avoided being with people	2.33 ± 0.91	1.68 ± 0.95	0.01*
Kept your feelings to yourself	1.35 ± 0.61	1.69 ± 0.86	0.05*

* $p < 0.05$

The six statistically significant different coping strategies, included a combination of *Emotion-focused* and *Problem-focused* coping strategies. Findings also showed that subjects with two or more chronic illnesses identified an *Emotive* coping style to be more effective than subjects with one chronic illness. This finding might be due to the feeling of subjects in this group that the presence of two or more than two chronic illnesses makes them feel that coping strategies which include releasing emotion is helpful to cope with the burden of multiple chronic illnesses since there is very little that can be done. Again, there needs to be an explanation about why they used one form, but thought another was more effective. Subjects evaluated their coping options and selected strategies that may help them to cope. Lazarus and Folkman (1984) stated that secondary appraisal is an evaluative process that takes into account which coping options are available, the likelihood that a given coping option will accomplish what is supposed to, and the likelihood that one can apply a particular strategy or a set of strategies effectively.

Subjects from both the one chronic illness group and the two or more chronic illness groups used *Emotional- focused* strategies more than *Problem- focused* strategies. However, they considered *Problem- focused* strategies to be more effective, but the

differences were not statistically significant. Subjects tend to use *Emotion- focused* coping strategies when they feel that very little can be done (Lazarus & Folkman, 1984).

Summary

Subject with one chronic illness and subjects with more than one chronic illness identified the coping strategy *Prayed or put your trust in God* as the number one used coping strategy and *Supportant* as their number one coping style. These coping strategies and styles were also identified as the most effective in the two groups. Religion and social support were the most used and perceived effective coping options. The findings also revealed that subjects with more than one chronic illness used significantly two coping strategies; one that belongs to the *Confrontive* and the other that belongs to the *Self-reliant* coping styles, which implies that subjects with more than one chronic illness used coping resources that required them to face and deal with the problem. These subjects might have gained experience through living with multiple chronic conditions that might have enabled them to explore the available coping resources and to select the most appropriate ones.

Implications for Nursing Practice, Research and Education

The findings of the current study revealed that Jordanian older adult subjects most commonly used *Prayed or put your trust in God* to cope with their chronic illnesses; this coping strategy belongs to the *Supportant* coping style. Patients tended to rely on God and to use available social support resources, including religious resources. Faith in God was identified by older Jordanian patients as the number one used coping strategy; also it was identified as the most effective from the subjects' point of view. Faith as it was reported by

Nabolsi and Carson's (2011) study, facilitated patients' acceptance of their disease and enhanced their coping strategies; it also encouraged them to seek medical treatment. Faith did not conflict with patients' belief in fate, which means that spirituality enhanced patients' inner strength, hope, and acceptance of self-responsibility, and helped them to find meaning and purpose in their lives. Subjects used different coping strategies, but most of these strategies were classified as *Emotion- focused* strategies. Although, subjects in the current study used a wide range of coping strategies, there were only few statistically significant differences between groups in the *used* and *effective* coping strategies and styles. When contrasted with the existing literature there were inconsistencies of the findings between the current study and the previous studies. Based on these findings, this section presents implications for nursing practice, nursing research, and nursing education.

Implications for Nursing Practice

Based on the findings of this study nurses should be more sensitive in identifying specific strategies to encourage more adaptive *Problem- focused* coping strategies and discourage maladaptive ones. They should also identify personal characteristics of individuals and characteristics of the environment that lead people to use one or another form of coping. Based on these characteristics, nurses can then educate patients about more effective ways of coping, which will fit their choices. In this study, literacy level, socioeconomic status, and presence of depressive symptoms might be linked to the use of different coping strategies. These results can be used to educate nurses about strategies that Jordanian older adults found effective in handling their chronic illnesses as well as to highlight the possible risk in using maladaptive coping styles such as *Emotive*, *Evasive*, and *Fatalistic*. However, it is important to stress that the use of coping styles is individual,

changes over time, and their effectiveness is often situation-dependent (Lazarus & Folkman, 1984). Moreover, nurses need to evaluate the educational level of the older adults with chronic illnesses and use appropriate strategies to incorporate appropriate coping methods, encourage them to express feelings about consequences and alternatives of treatment and be active in setting goals related to their disease management. Moreover, nurses must assess the coping strategies and styles of older adults and to show them the availability of coping resources that enable them to choose the strategies that fit their condition. Additionally, nurses must play a significant role in the community through assisting in establishing support groups for different patient populations and their families. Finally, nurses must focus in the significant role of religion as a method of coping with chronic diseases**.**

Implications for Nursing Research

Future studies should incorporate appropriate qualitative methods to explore the holistic meaning of coping among Jordanian older adults and to eliminate the barrier of low educational level. Qualitative methods might also reveal why patients would use one form of coping when they think another is more effective. Also, longitudinal research designs would be appropriate to study coping over time. Although, the JCS is a measure of coping which can be used in different clinical settings, the strategies are all general. A combination of both general and disease-specific coping strategies is probably more advisable, allowing comparison between different disease –related stressors and adequate assessment of cognitive and behavioral responses to specific stressors.

Future research could be focused on designing and testing specific nursing interventions to assist older adults with chronic illness to cope with stress. Since Lazarus (1966) has asserted that the effects of coping can be measured on the physiological,

psychological, and social level, appropriate outcome criteria must be specified in order to assess the effectiveness of older adult's patients' coping methods.

Implications for Nursing Education

Based on the findings of this study, nurse educators should encourage student in the application of the theoretical concepts of coping in the clinical settings. Nursing students need to learn how to assess the coping methods patients use and to be able to identify the coping strategies that can lead to optimum outcomes as opposed to strategies that may not be as effective. Moreover, findings of this study can be used to educate current nurses about strategies that Jordanian older adults found effective in handling their chronic illnesses.

Strengths, Limitations, and Recommendations of the Study

Strengths

This study has numerous strengths: it is one of a few studies in Jordan that sought to assess the coping of Jordanian older adults with chronic illness. The findings of this study form the baseline data regarding the methods used by Jordanian older adults to cope with two of the most prevalent chronic illnesses in Jordan. This study also used two patient populations, older adults with cardiac disease, and older adults with diabetes mellitus

Limitations

Performing the study at two of the hospitals of the Royal Medical Services does not assure that the recruited subjects were similar to other older adults in other clinical settings such as the governmental, university, and private sectors. Cross sectional designs assess coping at one point of time. To learn how patients with different chronic illnesses cope with

the demand of their illnesses overtime, longitudinal designs would give a larger overview. While this research method might be preferable, it is not in the scope of a dissertation study, because of the length of time required, and the financial resources needed.

In this study the researcher did not assess the severity of the chronic illnesses or the presence of complications; the severity of the illness and the presence of complications may influence the subjects' primary and secondary appraisals. Consequently, the selection of particular coping option and the ability to overcome barriers may have influenced the selected choice.

The effectiveness of coping strategies or coping styles were assessed according to the perceptions of the subjects which may be considered insufficient, because the effectiveness of coping strategies and styles must be validated by other measures of health outcomes in addition to patients' subjective perceptions.

Recommendations

Future studies should incorporate appropriate qualitative methods to explore the holistic meaning of coping among Jordanian older adults. Also future studies should look at beliefs, perceptions, and practices to investigate the relationship between beliefs, perceptions and coping and to the factors influencing coping. Furthermore, in order to validate the effectiveness of specific coping strategies or styles, specific indictors to assess the effectiveness of coping must be used in addition to patients' perception. Finally, measures to enhance the generalizability of the findings must be taken, such as recruiting representative sample of older adult patients from different sectors (Governmental, universities, and private hospitals) and include measures to assess the severity of illness and the presence of complications, as these may influence patients' methods of coping.

Conclusion

The purpose of this study was to describe the coping strategies used by older Jordanian adults to cope with the most prevalent chronic illnesses. This study aimed specifically to find the strategies used by older Jordanian adults to cope with chronic illnesses, explore gender differences in coping strategies used by older male and female patients, to assesses differences in coping strategies used by older adults based on the most prevalent chronic illnesses, and differences in coping strategies used by older adults who suffer from one chronic illness, compared to those who suffer from two or more chronic illnesses. This study was guided by Lazarus and Folkman's (1984) cognitive theory of stress and coping. This theory was very useful in understanding and explaining of the findings of this study. A descriptive cross-sectional design was used. Quota sampling technique was used to recruit 184 older adult subjects who attended the outpatient clinics at King Hussein Hospital and Queen Alia Heart Institute (QAHI) with the diagnosis of cardiac disease, diabetes mellitus or both diseases. Data were collected through structured interview using the JCS-60, the ESSI, the PHQ-2 in addition to demographic data sheet.

The results of the study showed that there were more men than women (114 vs. 70). The majority were married, although more men were married than women. Women had lower levels of education and literacy than men in all the three disease groups. Seventy-five of the subjects had a cardiac diagnosis, 57 had a diabetes (DM) diagnosis, and 52 had both diseases. Subjects in all three groups, both men and women, used *Prayed or put your trust in God* as their number one coping strategy, and also perceived it as the most effective coping strategy, with no statistical differences. They also, identified *Supportant* and *Emotive* as the top two most used coping styles, with no statistical differences. However,

the use of coping styles that were statistically different included *Evasive* and *Self- reliant,* both of which were used more by men than women. Additionally, there were statistical differences in the use of *Emotional-focused* strategies, again with men using them more than women. Subjects in all three groups, both men and women almost used similar coping strategies and styles with only few statistically significant differences. Findings of this study indicated that with exception of *Supportant* coping style, the other most frequently used coping styles were not identified as the most effective. Moreover, finding of this study differed largely from most of the findings of the previous studies. These differences might be attributed to the differences of the patients' populations as well as to the cultural differences.

The findings of this study provided baseline data of how Jordanian older adults with chronic illness cope with their illness. This data can be used by health care personnel be more sensitive in identifying specific strategies to encourage more adaptive *Problem-focused* coping strategies and discourage maladaptive ones.

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Appendices

Appendix A

RMS Ethical Committee Approval

G. H. Q. Jordan Armed Forces
DIRECTORATE
ROYAL MEDICAL SERVICES
Human Research Ethics Committee
Amman – Jordan

بسم الله الرحمن الرحيم



القيادة العامة للقوات المسلحة الأردنية
مديريـــــــة
الخدمـــــات الطبية الملكيــــة
لجنة أخلاقيات المهنة
عمان – الأردن

التاريخ : ٢٠٠٨/٧/٢٩ م

الى : الباحث :
المقدم الممرض محمد هزاع بني خالد .

تحيه طيبة وبعد ....

* من دواعي سرورنا ابلاغكم بأن لجنة البحوث والدراسات السريرية والدوائية واخلاقيات المهنــة قــد وافقت باجتماعها الذي عقد لدى مديرية الخدمات الطبية الملكية بتاريخ ٢٠٠٨/٧/١٦ علــى اجـراء دراســة حــول ((استراتيجيات التأقلم مع الامراض المزمنة لدى المرضى الاردنيين كبار السن)) وممن يعانون من امراض ارتفاع التوتـــــر الشرياني والسكري وامراض القلب والربو .

د. العميد الطبيب
رئيس لجنة البحوث والدراســـات
السريرية والدوائية واخلاقيات المهنة
د. [illegible] الحرفوشي

Appendix B

Demographic Data, ESSI and PHQ-2

Demographic Data

1. Age (   ) Years

2. Gender
   1. Male
   2. Female

3. Place of residence
   (   )

4. Disease
   1. Cardiac
   2. DM
   3. Both

5. Medical Diagnosis
   (   )

6. Years since diagnosis
   (   ) Years

7. How many medications you are currently taking?
   (   )

8. Last result of HbA1c
   (%)

9. Do you suffer of any of the following diseases?
   1. Respiratory diseases
   2. Hematological diseases
   3. GI diseases
   4. Musculoskeletal diseases
   5. Genitourinary diseases
   6. Other diseases (Specify………..)
   7. No other disease

10. Highest education attained: (circle appropriate number):
    1. Illiterate
    2. Less than 6 years of education
    3. More than 6 years of education and less than high school certificate
    4. High school certificate
    5. Diploma
    6. Bachelor degree
    7. More than Bachelor degree

11. Marital status: (circle appropriate number)
    1. Single
    2. Married
    3. Widowed
    4. Divorced
    5.

12. Number of your family members including you

    (   )

13. Number of previous heart attacks
    (   )

14. Number of previous hospitalizations
    (   )

15. Have you undergone cardiac surgery?
    1. Yes
    2. No

16. Work status
    1. Working part time
    2. Working full time
    3. Retired
    4. Unemployed
    5. Other

17. Monthly family income: Please look at

18. Number of adult family members

Demographic Data

the following choices and tell me which group best represents your monthly income. If married, include spouse's income.

1. Less than 150 JDs
2. 151-300 JDs
3. 301-450 JDS
4. 451-600 JDs
5. 601-750 JDS
6. 751-900 JDs
7. 901-1050 JDs
8. 1051-1200 JDS
9. More than 1200 JDs
10. I do not know

who depend on this income

( )

19. Is the income of your family is enough to take care of the family needs?
    1. Yes
    2. No

20. If employed, how stressful is your employment?
    1. Very stressful
    2. Moderately stressful
    3. Somewhat stressful
    4. Little stressful
    5. Not stressful at all

In the following questions, there will be questions about your general health

21. In general, you would say that your health is:
    1. Excellent
    2. Very good
    3. Good
    4. Fair
    5. Poor

22. In total how many total hours you sleep in the last 24 hours?

    ( ) Hours

23. You evaluate the quality of your sleep as:
    1. Excellent
    2. Very good
    3. Good
    4. Fair
    5. Poor

24. When you wake up, you feel;
    1. Tired
    2. Relaxed

25. During the last month, please identify the degree of regular pain you feel.
    1. I did not feel any pain
    2. I felt very mild pain
    3. I felt mild pain
    4. I felt moderate pain
    5. I felt severe pain
    6. I felt very severe pain

Demographic Data

- Please read the following questions and circle the response that most closely describes your current situation.

	Items	None of the time	A little of the time	Some of the time	Most of the time	All of the time
26.	Is there someone available to you whom you can count on to listen to you when you need to talk?	1	2	3	4	5
27.	Is there someone available to give you good advice about a problem?	1	2	3	4	5
28.	Is there someone available to you who show you love and affection?	1	2	3	4	5
29.	Is there someone available to help you with daily chores?	1	2	3	4	5
30.	Can you count on anyone to provide you with emotional support (talking over problems or helping you make a difficult decision)?	1	2	3	4	5
31.	Do you have as much contact as you would like with someone you feel close to, someone in whom you can trust and confide?	1	2	3	4	5

Over the last **two weeks,** how often have you been bothered by any of the following problems?

32. Little interest or pleasure in doing things
    1. Yes
    2. No

33. Feeling down, depressed, or hopeless
    1. Yes
    2. No

Appendix C

 ID #

____

JALOWIEC COPING SCALE

This questionnaire is about how you cope with stress and tension, and what you do to handle stressful situations. In particular, I am interested in how you have coped with the stress of:

____

This questionnaire lists many different ways of coping with stress. Some people use a lot of different coping methods; some people use only a few.

You will be asked two questions about each different way of coping with stress:

Part A

How often have you used that coping method to handle the stress listed above?

For each coping method listed, circle one number in Part A t o show how of t en you have used t hat method t o cope w it h t he stress listed above. The meaning of t he numbers in Part A is as follow s:

0 = never used
1 = seldom used
2 = sometimes used
3 = often used

Part B

If you have used that coping method, how helpful was it in dealing with that stress?

For each coping method t hat you have used, circle a number in Part B t o show
how helpful t hat method was in coping w it h t he stress listed above.
The meaning of the numbers in Part B is as follows:

0 = not helpful
1 = slightly helpful
2 = fairly helpful
3 = very helpful

If you did not use a particular coping method, then do not circle any number in Part B for that coping method.

COPING METHODS	Part A				Part B			
	How often have you used each coping method?				**If you have used that coping method, how helpful was it?**			
	Never Used	Seldom Used	Sometimes Used	Often Used	Not Helpful	Slightly Helpful	Fairly Helpful	Very Helpful
Worried about the problem	0	1	2	3	0	1	2	3
Hoped that things would get better	0	1	2	3	0	1	2	3
Ate or smoked m ore than usual Thought out different ways to handle	0	1	2	3	0	1	2	3
the situation T old yourself that things could be much	0	1	2	3	0			
worse	0	1	2	3	0	1	2	3
Exercised or did some physical activity Tried to get away from the problem	0	1	2	3	0	1	2	3
for a while	0	1	2	3	0			
Got mad and let off steam	0	1	2	3	0		1	2
Expected the worst that could happen Tried to put the problem out of your	0	1	2	3	0		1	2
mind and think of something else	0	1	2	3	0	1	2	3
Talked the problem over with family								
or friends	0	1	2	3	0	1	2	3
Accepted the situation because very								
little could be done	0	1	2	3	0	1	2	3
Tried to look at the problem objectively							1	2
and see all sides	0	1	2	3	0	1	2	3
Daydreamed about a better life	0	1	2	3	0			
Talked the problem over with a								
professional person (such as a doctor,						1	2	3
nurse, minister, teacher, counselor)	0	1	2	3	0		1	2
Tried to keep the situation under						1	2	3
control	0	1	2	3	0	1	2	3
Prayed or put your trust in God	0	1	2	3	0	1	2	3
Tried to get out of the situation	0	1	2	3	0	1	2	3
Kept your feelings to yourself	0	1	2	3	0			
T old yourself that the problem						1	2	3
was someone else 's fault	0	1	2	3	0	1	2	3
Waited to see what would happen	0	1	2	3	0	1	2	3
W anted to be alone to think things out	0	1	2	3	0			
Resigned yourself to the situation						1	2	3
because things looked hopeless	0	1	2	3	0			
Took out your tensions on someone						1	2	3
else	0	1	2	3	0	1	2	3
Tried to change the situation	0	1	2	3	0	1	2	3

COPING METHODS	Part A				Part B			
	How often have you used each coping method?				**If you have used that coping method, how helpful was it?**			
	Never Used	Seldom Used	Sometimes Used	Often Used	Not Helpful	Slightly Helpful	Fairly Helpful	Very Helpful
Used relaxation techniques	0	1	2	3	0	1	2	3
Tried to find out m ore about the								
problem	0	1	2	3	0	1	2	3
Slept more than usual	0	1	2	3	0	1	2	3
Tried to handle things one step								
at a time	0	1	2	3	0	1	2	3
Tried to keep your life as normal as								
possible and not let the problem								
interfere	0	1	2	3	0	1	2	3
Thought about how you had handled								
Used relaxation techniques	0	1	2	3	0	1	2	3
other problems in the past	0	1	2	3	0			
T old yourself not to worry because						1	2	3
everything would work out fine	0	1	2	3	0	1	2	3
Tried to work out a compromise	0	1	2	3	0			
Took a drink to m a k e yourself						1	2	3
feel better	0	1	2	3	0	1	2	3
other problems in the past	0	1	2	3	0			
T old yourself not to worry because						1	2	3
everything would work out fine	0	1	2	3	0	1	2	3
Tried to work out a compromise	0	1	2	3	0	1	2	3
Took a drink to m a k e yourself								
Let time take care of the problem	0	1	2	3	0	1	2	3
Tried to distract yourself by doing								
something that you enjoy	0	1	2	3	0	1	2	3
T old yourself that you could handle						1	2	3
anything no matter how hard	0	1	2	3	0	1	2	3
Set up a plan of action	0	1	2	3	0	1	2	3
Tried to keep a sense of humor	0	1	2	3	0			
Put off facing up to the problem	0	1	2	3	0	1	2	3
Tried to keep your feelings under								
control	0	1	2	3	0	1	2	3
Talked the problem over with someone								
who had been in a similar situation	0	1	2	3	0	1	2	3
Practiced in your mind what had						1	2	3
to be done	0	1	2	3	0			
Tried to keep busy	0	1	2	3	0	1	2	3
Learned something new in order to								
deal with the problem better	0	1	2	3	0	1	2	3

COPING METHODS	Part A				Part B			
	How often have you used each coping method?				**If you have used that coping method, how helpful was it?**			
	Never Used	Seldom Used	Sometimes Used	Often Used	Not Helpful	Slightly Helpful	Fairly Helpful	Very Helpful
Did something impulsive or r is k y								
that you would not usually do	0	1	2	3	0	1	2	3
Thought about the good things in						1	2	3
your life	0	1	2	3	0			
Tried to ignore or avoid the problem	0	1	2	3	0	1	2	3
Compared yourself with other people						1	2	3
who were in the same situation	0	1	2	3	0	1	2	3
Tried to think positively	0	1	2	3	0	1	2	3
Blamed yourself for getting into						1	2	3
such a situation	0	1	2	3	0	1	2	3
Preferred to work things out yourself	0	1	2	3	0			
Took medications to reduce tension	0	1	2	3	0	1	2	3
Tried to see the good side of the								
situation	0	1	2	3	0	1	2	3
Told yourself that this problem						1	2	3
was re ally not that important	0	1	2	3	0			
Avoided being with people	0	1	2	3	0	1	2	3
Tried to improve yourself in some way								
so you could hand le the situation better	0	1	2	3	0	1	2	3
Wished that the problem would								
Depended on others to help you out	0	1	2	3	0	1	2	3
Told yourself that you were just having						1	2	3
some bad luck	0	1	2	3	0	1	2	3

If there are any other things you did to handle the stress mentioned at the beginning, that are not on this list, please write those coping methods in the spaces below. Then circle how often you have used each coping method, and how helpful each coping method has been.

61 .	1	2	3	0	1	2	3
62 .	1	2	3	0	1	2	3
63 .	1	2	3	0	1	2	3

Appendix D

Classification of Coping Strategies as Emotion-oriented and Problem Oriented

no	Coping Strategies	Class
1.	Worried about the problem	E
2.	Hoped t hat things would get better	E
3.	Ate or smoked more than usual	E
4.	Thought out different ways to handle the situation	P
5.	Told yours elf that things could be much worse	E
6.	Exercised or did some physical activity	E
7.	Tried to get away from the problem for a while	E
8.	Got ma d an d let off steam	E
9.	Expected the worst that could happen	E
10.	Tried t o put the problem out of your mind and think of something else	E
11.	Talked the problem over with family or friends	E
12.	Accepted the situation because very little could be done	P
13.	Tried to look at the problem objectively and see all sides	P
14.	Day dream e d about a better life	E
15.	Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	P
16.	Tried t o keep the situation under control	P
17.	Prayed or put your trust in God	E
18.	Tried to get out of the situation	P
19.	Kept your feelings to yourself	E
20.	Told yourself that the problem was someone else 's fault	E
21.	Waited to se e what would happen	E
22.	Wanted to be alone to think things out	P
23.	Resigned yours elf to the situation because things looked hopeless	E
24.	Took out your tensions on someone else	E
25.	Tried t o change the situation	P
26.	Used relaxation techniques	E
27.	Tried to find out more about the problem	P
28.	Slept more than usual	E
29.	Tried to hand le things one step at a time	P
30.	Tried t o keep your life as norm al as possible and no t le t the problem interfere	P
31.	Thought about how you had handled other problems in the past	P
32.	Told yourself not to worry because everything would work out fine	E
33.	Tried to work out a compromise	P
34.	Took a drink to make yourself feel better	E
35.	Let time take ca re of the problem	E

no	Coping Strategies	Class
36.	Tried to distract yours elf by doing something t hat you enjoy	E
37.	Told yourself that you could handle anything no matter how hard	E
38.	Set up a plan of action	P
39.	Tried t o keep a sense of humor	E
40.	Put off facing up to the problem	E
41.	Tried to keep your feelings under control	E
42.	Talked the problem over with someone who had been in a similar situation	P
43.	Practiced in your mind what had to be done	P
44.	Tried to keep busy	P
45.	Learned something new in order to deal with the problem better	P
46.	Did something impulsive or risky that you would not usually do	E
47.	Thought about the good thing s in your life	E
48.	Tried to ignore or avoid t he problem	E
49.	Compared yourself with other people who w ere in the same situation	P
50.	Tried to think positively	P
51.	Blamed your self for getting into such a situation	E
52.	Preferred to work things out yourself	P
53.	Took medications to re duce tension	E
54.	Tried to see t he good side of the situation	P
55.	Told y ours elf that this problem was really not that important	E
56.	Avoided being with people	E
57.	Tried to improve yours elf in some way so you could handle the situation better	P
58.	Wished that the problem would go away	E
59.	Depended on others to help you out	E
60.	Told yourself that you were just having some bad luck	E

E = Emotion - Oriented   P = Problem- Oriented

Appendix E
Translated Jalowiec Coping Scale
مقياس جالويك للتكيف

هذا الاستبيان يوضح بعض الطرق حول كيفية تكيفك مع الضغوطات والتوتر وكيفية معالجتك لموقف يشوبه التوتر

أنا معني بكيفية تكيفك مع ضغوطات ....

هذا الاستبيان يحوي طرق عديدة و مختلفة للتكيف مع الضغوطات. بعض الناس يستعمل الكثير من هذه الطرق و البعض الآخر يستعمل القليل منها.

سوف يتم طرح سؤالين عليك حول كل طريقة من هذه الطرق المستخدمة للتكيف مع الضغوطات.

الجزء (أ) : ما **مدى استعمالك لطريقة** التكيف للتعامل مع الضغوطات, أشر إلى رقم واحد من الأرقام المذكورة حيث (0) تعني عدم استعمال الطريقة, (1) تعني استعمالها نادراً, (2) تعني أحياناً يتم استعمالها , و (3) تعني استعمالها في غالبية الأحيان.

الجزء (ب) : إذا قمت بإستخدام و سيلة التكيف, كم كانت هذه الطريقة مفيدة للتعامل مع الضغوطات و يرجى الإشارة إلى رقم من الأرقام المذكورة تالياً بحيث الرقم (0) يعنى أن الطريقة لم تكن مفيدة على ألإطلاق, الرقم (1) يعني أن الطريقة كانت مفيدة بشكل قليل, الرقم (2) يعني أن الطريقة كانت مفيدة بشكل مرضي, و الرقم (3) يعني أن الطريقة كانت مفيدة بشكل كبير.

ت	طريقة التكيف	**الجزء (1)** إلى أي مدى قمت باستخدام أي من طرق التكيف المذكورة؟				الجزء (2) إذا تم استخدام أي من الطرق المذكورة, إلى أي درجة كانت مفيدة؟			
		لا أستعملها أبداً	استعملتها نادراً	استعملتها أحياناً	استعملتها غالباً	لم تكن مفيدة	كانت مفيدة قليلاً	كانت مفيدة بشكل مرضي	كانت مفيدة جداً
.1	كنت قلقاً بشأن المشكلة	0	1	2	3	0	1	2	3
.2	كنت آمل بأن الظروف سوف تتحسن بالنسبة لصحتك	0	1	2	3	0	1	2	3
.3	أكلت و دخنت أكثر من المعتاد	0	1	2	3	0	1	2	3
.4	فكرت بطرق مختلفة للتعامل مع المشكلة	0	1	2	3	0	1	2	3
.5	قلت لنفسك بأن الأمور كان ممكن ان تكون أكثر سوءاً	0	1	2	3	0	1	2	3
.6	قمت بعمل تمارين أو نشاط جسماني	0	1	2	3	0	1	2	3
.7	حاولت الابتعاد عن المشكلة ولو لفترة ما	0	1	2	3	0	1	2	3
.8	أصابك الغضب و نفست عن غضبك	0	1	2	3	0	1	2	3
.9	توقعت حدوث أسوأ شيء يمكن أن يحدث	0	1	2	3	0	1	2	3
.10	حاولت إبعاد المشكلة عن تفكيرك و فكرت بشئ آخر	0	1	2	3	0	1	2	3
.11	تحدثت حول المشكلة مع العائلة أو الأصدقاء	0	1	2	3	0	1	2	3

ت	طريقة التكيف	**الجزء (1)** إلى أي مدى قمت باستخدام أي من طرق التكيف المذكورة؟				الجزء (2) إذا تم استخدام أي من الطرق المذكورة, إلى أي درجة كانت مفيدة؟			
		لا أستعملها أبدا	استعملتها نادراً	استعملتها أحياناً	استعملتها غالباً	لم تكن مفيدة	كانت مفيدة قليلاً	كانت مفيدة بشكل مرضي	كانت مفيدة جداً
.12	تقبلت الوضع لأن هناك القليل الذي يمكن عمله	0	1	2	3	0	1	2	3
.13	حاولت النظر إلى المشكلة بشكل موضوعي و رؤية جميع جوانبها	0	1	2	3	0	1	2	3
.14	حلمت بحياة أفضل - أحلام يقظة	0	1	2	3	0	1	2	3
.15	تحدثت حول المشكلة مع شخص مختص (مثل الطبيب, الممرضة, مستشار,..الخ)	0	1	2	3	0	1	2	3
.16	حاولت إبقاء الوضع تحت السيطرة	0	1	2	3	0	1	2	3
.17	صليت و توكلت على الله	0	1	2	3	0	1	2	3
.18	حاولت الخروج من الوضع	0	1	2	3	0	1	2	3
.19	احتفظت بمشاعرك لنفسك	0	1	2	3	0	1	2	3
.20	قلت لنفسك بأن المشكلة هي خطأ شخص آخر و ليس خطأك	0	1	2	3	0	1	2	3
.21	انتظرت لترى ماذا سيحدث	0	1	2	3	0	1	2	3
.22	أردت البقاء لوحدك لتفكر بالأمر	0	1	2	3	0	1	2	3
.23	تذعن للوضع الراهن لأن الأمور تبدو ميئوس منها	0	1	2	3	0	1	2	3
.24	تنفس عن توترك بتوجيهه لشخص آخر	0	1	2	3	0	1	2	3
.25	حاولت تغيير الوضع	0	1	2	3	0	1	2	3
.26	استعملت أساليب الاسترخاء	0	1	2	3	0	1	2	3
.27	حاولت البحث عن معلومات أكثر بخصوص المشكلة	0	1	2	3	0	1	2	3
.28	نمت أكثر من المعتاد	0	1	2	3	0	1	2	3
.29	حاولت التعامل مع المشكلة خطوة خطوة	0	1	2	3	0	1	2	3
.30	حاولت الحفاظ على حياتك طبيعية قدر الإمكان مع عدم السماح للمشكلة بعرقلتها	0	1	2	3	0	1	2	3
.31	فكرت في كيفية تعاملك مع المشاكل الأخرى في السابق	0	1	2	3	0	1	2	3
.32	قلت لنفسك بأن لا تقلق لأن كل شيء سيكون على ما يرام	0	1	2	3	0	1	2	3
.33	حاولت أن تحقق تسوية (حل وسط) (تنازلت عن بعض الأشياء)	0	1	2	3	0	1	2	3
.34	تناولت المشروبات لتشعر بالتحسن	0	1	2	3	0	1	2	3
.35	جعلت الزمن يحل المشكلة (تركت المشكلة للزمن)	0	1	2	3	0	1	2	3
.36	حاولت إلهاء نفسك بالانشغال بشيء ممتع للابتعاد عن المشكلة	0	1	2	3	0	1	2	3
.37	قلت لنفسك بأنك قادر على التعامل مع أية مشكلة مهما كانت درجة صعوبتها	0	1	2	3	0	1	2	3

ت	طريقة التكيف	الجزء (1) إلى أي مدى قمت باستخدام أي من طرق التكيف المذكورة؟				الجزء (2) إذا تم استخدام أي من الطرق المذكورة, إلى أي درجة كانت مفيدة؟			
		لا أستعملها أبداً	استعملتها نادراً	استعملتها أحياناً	استعملتها غالباً	لم تكن مفيدة	كانت مفيدة قليلاً	كانت مفيدة بشكل مرضي	كانت مفيدة جداً
38.	وضعت خطة للعمل	0	1	2	3	0	1	2	3
39.	حاولت أن تكون مرحاً	0	1	2	3	0	1	2	3
40.	أجلت أو تجنبت مواجهة المشكلة	0	1	2	3	0	1	2	3
41.	حاولت السيطرة على مشاعرك	0	1	2	3	0	1	2	3
42.	تحدثت حول المشكلة مع شخص آخر في نفس الوضع	0	1	2	3	0	1	2	3
43.	تدربت في مخيلتك على ما يجب عمله	0	1	2	3	0	1	2	3
44.	حاولت أن تبقي نفسك مشغولاً	0	1	2	3	0	1	2	3
45.	تعلمت شيئاً جديداً للتعامل مع المشكلة	0	1	2	3	0	1	2	3
46.	قمت بفعل شئ خطر (متهور)غير معتاد على فعله	0	1	2	3	0	1	2	3
47.	فكرت في الأشياء الجميلة في حياتك	0	1	2	3	0	1	2	3
48.	حاولت تجاهل أو تجنب المشكلة	0	1	2	3	0	1	2	3
49.	قارنت نفسك بالأشخاص الذين يعيشون في نفس الوضع الذي تعيش فيه	0	1	2	3	0	1	2	3
50.	حاولت التفكير بطريقة إيجابية (في أي وضع تركز على الأشياء الجيدة)	0	1	2	3	0	1	2	3
51.	لمت نفسك لوقوعك بهذه المشكلة	0	1	2	3	0	1	2	3
52.	فضلت أن تحل مشاكلك بنفسك بنفسك	0	1	2	3	0	1	2	3
53.	تناولت العلاجات لتخفف التوتر	0	1	2	3	0	1	2	3
54.	حاولت رؤية الجانب الجيد من المشكلة	0	1	2	3	0	1	2	3
55.	قلت لنفسك بأن هذه المشكلة ليست مهمة إلى هذه الدرجة	0	1	2	3	0	1	2	3
56.	تجنبت الاختلاط مع الناس	0	1	2	3	0	1	2	3
57.	حاولت تحسين نفسك في بعض الجوانب حتى تستطيع أن تتغلب على الوضع بطريق أفضل	0	1	2	3	0	1	2	3
58.	تمنيت أن تزول مشكلتك الصحية من دون مواجهه	0	1	2	3	0	1	2	3
59.	اعتمدت على الآخرين لمساعدتك في حل المشكلة	0	1	2	3	0	1	2	3
60.	قلت لنفسك أن ما حدث لك مجرد سوء حظا	0	1	2	3	0	1	2	3

Appendix F
Rank ordered means ± SD of used coping strategies by Cardiac group

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	75	1	3	2.84 ± 0.44	Supportant
Got mad and let off steam	58	1	3	2.36 ± 0.69	Emotive
Set up a plan of action	37	1	3	2.32 ± 0.71	Confrontive
Told yourself that things could be much worse	58	1	3	2.29 ± 0.73	Optimistic
Hoped that things would get better	72	1	3	2.28 ± 0.70	Optimistic
Day dreamed about a better life	45	1	3	2.27 ± 0.65	Evasive
Avoided being with people	34	1	3	2.26 ± 0.83	Evasive
Thought about the good things in your life	68	1	3	2.26 ± 0.73	Optimistic
Accepted the situation because very little could be done	65	1	3	2.26 ± 0.78	Fatalistic
Worried about the problem	50	1	3	2.26 ± 0.75	Emotive
Waited to see what would happen	41	1	3	2.24 ± 0.73	Evasive
Tried to get away from the problem for a while	51	1	3	2.24 ± 0.79	Evasive
Tried to distract yourself by doing something that you enjoy	60	1	3	2.23 ± 0.62	Palliative
Tried to keep the situation under control	55	1	3	2.16 ± 0.81	Confrontive
Tried to put the problem out of your mind and think of something else	57	1	3	2.16 ± 0.70	Evasive
Kept your feelings to yourself	45	1	3	2.16 ± 0.82	Self-reliant
Tried to keep a sense of humor	63	1	3	2.11 ± 0.63	Optimistic
Tried to look at the problem objectively and see all sides	45	1	3	2.11 ± 0.75	Confrontive
Tried to ignore or avoid the problem	37	1	3	2.11 ± 0.66	Evasive
Tried to keep busy	56	1	3	2.11 ± 0.62	Palliative
Preferred to work things out yourself	54	1	3	2.09 ± 0.71	Self-reliant
Used relaxation techniques	55	1	3	2.09 ± 0.73	Palliative
Wanted to be alone to think things out	47	1	3	2.09 ± 0.72	Self-reliant

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Told yourself that you were just having some bad luck	13	1	3	2.08 ± 0.86	Fatalistic
Practiced in your mind what had to be done	29	1	3	2.07 ± 0.75	Confrontive
Tried to work out a compromise	30	1	3	2.07 ± 0.64	Confrontive
Tried to keep your life as normal as possible and not let the problem interfere	69	1	3	2.06 ± 0.75	Optimistic
Depended on others to help you out	54	1	3	2.06 ± 0.60	Supportant
Compared yourself with other people who were in the same situation	52	1	3	2.04 ± 0.59	Optimistic
Took out your tensions on someone else	32	1	3	2.03 ± 0.82	Emotive
Told yourself not to worry because everything would work out fine	66	1	3	2.03 ± 0.70	Optimistic
Tried to find out more about the problem	45	1	3	2.02 ± 0.72	Confrontive
Told yourself that you could handle anything no matter how hard	48	1	3	2.02 ± 0.79	Self-reliant
Told yourself that this problem was really not that important	49	1	3	2.00 ± 0.68	Evasive
Tried to think positively	50	1	3	2.00 ± 0.78	Optimistic
Tried to keep your feelings under control	56	1	3	2.00 ± 0.69	Self-reliant
Tried to handle things one step at a time	47	1	3	2.00 ± 0.69	Confrontive
Ate or smoked more than usual	20	1	3	2.00 ± 0.86	Palliative
Talked the problem over with someone who had been in a similar situation	49	1	3	1.98 ± 0.63	Supportant
Put off facing up to the problem	40	1	3	1.98 ± 0.66	Evasive
Thought about how you had handled other problems in the past	39	1	3	1.97 ± 0.71	Self-reliant
Blamed your self for getting into such a situation	29	1	3	1.97 ± 0.78	Emotive
Slept more than usual	25	1	3	1.96 ± 0.84	Evasive
Tried to get out of the situation	48	1	3	1.94 ± 0.63	Evasive
Thought out different ways to handle the situation	43	1	3	1.93 ± 0.86	Confrontive

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Expected the worst that could happen	43	1	3	1.93 ± 0.67	Fatalistic
Tried to see the good side of the situation	56	1	3	1.93 ± 0.68	Optimistic
Talked the problem over with family or friends	54	1	3	1.93 ± 0.67	Supportant
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	57	1	3	1.89 ± 0.65	Supportant
Let time take care of the problem	34	1	3	1.88 ± 0.64	Evasive
Did something impulsive or risky that you would not usually do	11	1	3	1.82 ±0.60	Emotive
Tried to change the situation	53	1	3	1.81 ± 0.76	Confrontive
Tried to improve yourself in some way so you could handle the situation better	49	1	3	1.80 ± 0.71	Self-reliant
Told yourself that the problem was someone else's fault	21	1	3	1.76 ± 0.70	Evasive
Learned something new in order to deal with the problem better	29	1	3	1.76 ± 0.69	Confrontive
Resigned yourself to the situation because things looked hopeless	23	1	3	1.74 ± 0.69	Fatalistic
Took medications to reduce tension	13	1	3	1.69 ± 0.63	Palliative
Wished that the problem would go away	38	1	3	1.68 ± 0.53	Evasive
Exercised or did some physical activity	46	1	3	1.67 ± 0.67	Palliative
Took a drink to make yourself feel better	6	1	2	1.50 ± 0.55	Palliative

Appendix G
Rank ordered means ± SD of used coping strategies by DM group

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	57	1	3	2.86 ± 0.40	Supportant
Worried about the problem	44	1	3	2.34 ± 0.78	Emotive
Told yourself that things could be much worse	45	1	3	2.29 ± 0.66	Optimistic
Hoped that things would get better	47	1	3	2.23 ± 0.63	Optimistic
Tried to find out more about the problem	43	1	3	2.16 ± 0.75	Confrontive
Thought out different ways to handle the situation	46	1	3	2.15 ± 0.70	Confrontive
Tried to keep your feelings under control	44	1	3	2.14 ± 0.73	Self-reliant
Talked the problem over with family or friends	48	1	3	2.12 ± 0.73	Supportant
Thought about the good things in your life	49	1	3	2.12 ± 0.75	Optimistic
Kept your feelings to yourself	41	1	3	2.12 ± 0.81	Self-reliant
Got mad and let off steam	44	1	3	2.11 ± 0.81	Emotive
Tried to keep your life as normal as possible and not let the problem interfere	51	1	3	2.10 ± 0.61	Optimistic
Compared yourself with other people who were in the same situation	41	1	3	2.10 ± 0.66	Optimistic
Accepted the situation because very little could be done	56	1	3	2.09 ± 0.69	Fatalistic
Talked the problem over with someone who had been in a similar situation	46	1	3	2.07 ± 0.68	Supportant
Expected the worst that could happen	40	1	3	2.05 ± 0.71	Fatalistic
Avoided being with people	20	1	3	2.05 ± 0.69	Evasive
Tried to put the problem out of your mind and think of something else	45	1	3	2.04 ± 0.71	Evasive
Took out your tensions on someone else	28	1	3	2.04 ± 0.79	Emotive

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	49	1	3	2.02 ± 0.63	Supportant
Tried to keep the situation under control	51	1	3	2.02 ± 0.68	Self-reliant
Day dreamed about a better life	36	1	3	2.00 ± 0.76	Evasive
Told yourself that the problem was someone else's fault	15	1	3	2.00 ± 0.65	Evasive
Ate or smoked more than usual	12	1	3	2.00 ± 0.74	Palliative
Used relaxation techniques	49	1	3	1.98 ± 0.66	Palliative
Tried to get away from the problem for a while	47	1	3	1.98 ± 0.64	Evasive
Tried to get out of the situation	47	1	3	1.96 ± 0.66	Evasive
Tried to look at the problem objectively and see all sides	44	1	3	1.95 ± 0.75	Confrontive
Tried to improve yourself in some way so you could handle the situation better	39	1	3	1.95 ± 0.65	Self-reliant
Tried to ignore or avoid the problem	37	1	3	1.95 ± 0.70	Evasive
Wished that the problem would go away	42	1	3	1.93 ± 0.78	Evasive
Thought about how you had handled other problems in the past	37	1	3	1.92 ± 0.72	Self-reliant
Tried to handle things one step at a time	45	1	3	1.91 ± 0.76	Confrontive
Tried to work out a compromise	39	1	3	1.90 ± 0.68	Confrontive
Tried to think positively	46	1	3	1.89 ± 0.71	Optimistic
Depended on others to help you out	44	1	3	1.89 ± 0.65	Supportant
Preferred to work things out yourself	43	1	3	1.88 ± 0.70	Self-reliant
Tried to distract yourself by doing something that you enjoy	43	1	3	1.88 ± 0.73	Palliative
Tried to change the situation	42	1	3	1.88 ± 0.80	Confrontive
Tried to keep busy	47	1	3	1.87 ± 0.71	Palliative
Told yourself not to worry because everything would work out fine	47	1	3	1.87 ± 0.65	Optimistic
Put off facing up to the problem	38	1	3	1.87 ± 0.74	Evasive

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Slept more than usual	30	1	3	1.87 ± 0.73	Palliative
Tried to keep a sense of humor	45	1	3	1.84 ± 0.64	Optimistic
Learned something new in order to deal with the problem better	38	1	3	1.84 ± 0.72	Confrontive
Told yourself that this problem was really not that important	42	1	3	1.83 ± 0.73	Evasive
Resigned yourself to the situation because things looked hopeless	24	1	3	1.83 ± 0.82	Fatalistic
Wanted to be alone to think things out	34	1	3	1.82 ± 0.83	Self-reliant
Tried to see the good side of the situation	38	1	3	1.82 ± 0.73	Optimistic
Set up a plan of action	40	1	3	1.80 ± 0.82	Confrontive
Exercised or did some physical activity	38	1	3	1.79 ± 0.84	Palliative
Took medications to reduce tension	17	1	3	1.76 ± 0.75	Palliative
Blamed your self for getting into such a situation	25	1	3	1.72 ± 0.79	Emotive
Waited to see what would happen	40	1	3	1.70 ± 0.69	Evasive
Let time take care of the problem	39	1	3	1.67 ± 0.77	Evasive
Took a drink to make yourself feel better	6	1	2	1.67 ± 0.52	Palliative
Told yourself that you could handle anything no matter how hard	48	1	3	1.67 ± 0.69	Self-reliant
Practiced in your mind what had to be done	32	1	3	1.59 ± 0.71	Confrontive
Told yourself that you were just having some bad luck	20	1	3	1.50 ± 0.69	Fatalistic
Did something impulsive or risky that you would not usually do	14	1	3	1.36 ± 0.63	Emotive

Appendix H
Rank ordered means ± SD of used coping strategies by Mixed group

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	52	1	3	2.79 ± 0.50	Supportant
Ate or smoked more than usual	15	1	3	2.60 ± 0.63	Palliative
Thought about the good things in your life	44	1	3	2.55 ± 0.59	Optimistic
Worried about the problem	41	1	3	2.37 ± 0.58	Emotive
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	45	1	3	2.36 ± 0.77	Supportant
Accepted the situation because very little could be done	47	1	3	2.30 ± 0.75	Fatalistic
Told yourself not to worry because everything would work out fine	42	1	3	2.29 ± 0.67	Optimistic
Tried to keep a sense of humor	49	1	3	2.29 ± 0.65	Optimistic
Day dreamed about a better life	33	1	3	2.27 ± 0.76	Evasive
Hoped that things would get better	49	1	3	2.27 ± 0.81	Optimistic
Got mad and let off steam	35	1	3	2.26 ± 0.74	Emotive
Told yourself that things could be much worse	47	1	3	2.26 ± 0.64	Optimistic
Tried to keep your life as normal as possible and not let the problem interfere	49	1	3	2.24 ± 0.66	Optimistic
Talked the problem over with someone who had been in a similar situation	43	1	3	2.23 ± 0.61	Supportant
Talked the problem over with family or friends	45	1	3	2.22 ± 0.82	Supportant
Tried to keep busy	42	1	3	2.21 ± 0.72	Palliative
Tried to look at the problem objectively and see all sides	36	1	3	2.19 ± 0.62	Confrontive
Tried to keep the situation under control	42	1	3	2.19 ± 0.77	Self-reliant
Expected the worst that could happen	39	1	3	2.18 ± 0.76	Fatalistic

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Told yourself that you could handle anything no matter how hard	40	1	3	2.17 ± 0.78	Self-reliant
Kept your feelings to yourself	41	1	3	2.17 ± 0.74	Self-reliant
Took out your tensions on someone else	31	1	3	2.16 ± 0.73	Emotive
Tried to keep your feelings under control	45	1	3	2.16 ± 0.71	Self-reliant
Thought about how you had handled other problems in the past	34	1	3	2.15 ± 0.74	Self-reliant
Tried to find out more about the problem	42	1	3	2.14 ± 0.72	Confrontive
Compared yourself with other people who were in the same situation	38	1	3	2.13 ± 0.66	Optimistic
Tried to get away from the problem for a while	39	1	3	2.13 ± 0.80	Evasive
Uced relaxation techniques	40	1	3	2.12 ± 0.61	Palliative
Wanted to be alone to think things out	35	1	3	2.11 ± 0.72	Self-reliant
Put off facing up to the problem	28	1	3	2.11 ± 0.74	Evasive
Tried to work out a compromise	39	1	3	2.08 ± 0.66	Confrontive
Tried to handle things one step at a time	44	1	3	2.07 ± 0.85	Confrontive
Slept more than usual	20	1	3	2.05 ± 0.76	Palliative
Avoided being with people	21	1	3	2.05 ± 0.80	Evasive
Tried to distract yourself by doing something that you enjoy	46	1	3	2.04 ± 0.73	Palliative
Tried to ignore or avoid the problem	33	1	3	2.03 ± 0.73	Evasive
Tried to put the problem out of your mind and think of something else	44	1	3	2.02 ± 0.76	Evasive
Set up a plan of action	34	1	3	2.00 ± 0.82	Confrontive
Wished that the problem would go away	35	1	3	2.00 ± 0.59	Evasive
Tried to improve yourself in some way so you could handle the situation better	44	1	3	2.00 ± 0.72	Self-reliant
Took medications to reduce tension	16	1	3	2.00 ± 0.82	Palliative

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to get out of the situation	44	1	3	1.98 ± 0.79	Evasive
Preferred to work things out yourself	46	1	3	1.96 ± 0.76	Self-reliant
Told yourself that you were just having some bad luck	20	1	3	1.95 ± 0.69	Fatalistic
Thought out different ways to handle the situation	40	1	3	1.95 ± 0.78	Confrontive
Practiced in your mind what had to be done	29	1	3	1.93 ± 0.84	Confrontive
Tried to see the good side of the situation	43	1	3	1.93 ± 0.74	Optimistic
Tried to think positively	43	1	3	1.93 ± 0.77	Optimistic
Tried to change the situation	43	1	3	1.93 ± 0.80	Confrontive
Depended on others to help you out	42	1	3	1.93 ± 0.71	Supportant
Waited to see what would happen	32	1	3	1.91 ± 0.59	Evasive
Learned something new in order to deal with the problem better	35	1	3	1.86 ± 0.55	Confrontive
Blamed your self for getting into such a situation	17	1	3	1.82 ± 0.88	Emotive
Resigned yourself to the situation because things looked hopeless	24	1	3	1.79 ± 0.59	Fatalistic
Exercised or did some physical activity	34	1	3	1.76 ± 0.85	Palliative
Told yourself that this problem was really not that important	31	1	3	1.71 ± 0.64	Evasive
Told yourself that the problem was someone else's fault	18	1	3	1.67 ± 0.69	Evasive
Let time take care of the problem	30	1	3	1.63 ± 0.61	Evasive
Did something impulsive or risky that you would not usually do	8	1	3	1.50 ± 0.76	Emotive
Took a drink to make yourself feel better	7	1	2	1.43 ± 0.53	Palliative

Appendix I

Rank ordered of the means ± SD of perceived effectiveness of coping strategies by Cardiac group

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	75	1	3	2.72 ± 0.53	Supportant
Set up a plan of action	37	0	3	2.30 ± 0.74	Confrontive
Used relaxation techniques	55	0	3	2.16 ± 0.81	Palliative
Tried to find out more about the problem	45	1	3	2.11 ± 0.80	Confrontive
Tried to distract yourself by doing something that you enjoy	60	0	3	2.05 ± 0.83	Palliative
Tried to look at the problem objectively and see all sides	45	0	3	2.02 ± 0.81	Confrontive
Tried to handle things one step at a time	47	0	3	2.02 ± 0.82	Confrontive
Hoped that things would get better	72	0	3	2.01 ± 0.83	Optimistic
Talked the problem over with someone who had been in a similar situation	49	1	3	2.00 ± 0.65	Supportant
Thought about how you had handled other problems in the past	39	0	3	1.97 ± 0.78	Self-reliant
Tried to work out a compromise	30	0	3	1.97 ± 0.61	Confrontive
Compared yourself with other people who were in the same situation	52	0	3	1.94 ± 0.78	Optimistic
Told yourself that you could handle anything no matter how hard	48	0	3	1.92 ± 0.87	Self-reliant
Avoided being with people	34	0	3	1.91 ± 1.06	Evasive
Slept more than usual	25	0	3	1.88 ± 0.93	Palliative
Tried to keep your life as normal as possible and not let the problem interfere	69	0	3	1.87 ± 0.91	Optimistic
Practiced in your mind what had to be done	29	0	3	1.86 ± 0.92	Confrontive
Tried to think positively	50	1	3	1.82 ± 0.66	Optimistic

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	57	0	3	1.81 ± 0.90	Supportant
Tried to see the good side of the situation	56	0	3	1.80 ± 0.84	Optimistic
Tried to keep the situation under control	55	0	3	1.80 ± 0.99	Self-reliant
Talked the problem over with family or friends	54	0	3	1.80 ± 0.88	Supportant
Tried to keep a sense of humor	63	0	3	1.79 ± 0.86	Optimistic
Took medications to reduce tension	13	1	3	1.77 ± 0.83	Palliative
Tried to keep busy	56	0	3	1.77 ± 0.74	Palliative
Learned something new in order to deal with the problem better	29	0	3	1.76 ± 0.74	Confrontive
Thought out different ways to handle the situation	43	0	3	1.72 ± 0.85	Confrontive
Tried to get out of the situation	48	0	3	1.71 ± 0.74	Evasive
Tried to get away from the problem for a while	51	0	3	1.71 ± 0.86	Evasive
Preferred to work things out yourself	54	0	3	1.70 ± 0.88	Self-reliant
Tried to put the problem out of your mind and think of something else	57	0	3	1.70 ± 0.73	Evasive
Exercised or did some physical activity	46	0	3	1.70 ± 0.76	Palliative
Thought about the good things in your life	68	0	3	1.68 ± 1.00	Optimistic
Tried to improve yourself in some way so you could handle the situation better	49	0	3	1.65 ± 0.69	Self-reliant
Told yourself not to worry because everything would work out fine	66	0	3	1.64 ± 0.87	Optimistic
Accepted the situation because very little could be done	65	0	3	1.63 ± 0.93	Fatalistic
Told yours elf that things could be much worse	58	0	3	1.62 ± 0.93	Optimistic
Kept your feelings to yourself	45	0	3	1.60 ± 0.81	Self-reliant
Depended on others to help you out	54	0	3	1.59 ± 0.71	Supportant

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to change the situation	53	0	3	1.58 ± 0.93	Confrontive
Day dreamed about a better life	45	0	3	1.58 ± 0.97	Evasive
Tried to keep your feelings under control	56	0	3	1.55 ± 0.78	Self-reliant
Took a drink to make yourself feel better	6	0	2	1.50 ± 0.84	Palliative
Wanted to be alone to think things out	47	0	3	1.49 ± 0.93	Self-reliant
Told yourself that this problem was really not that important	49	0	3	1.45 ± 0.91	Evasive
Took out your tensions on someone else	32	0	3	1.41 ± 0.98	Emotive
Let time take care of the problem	34	0	3	1.24 ± 0.82	Evasive
Told yourself that you were just having some bad luck	13	0	3	1.23 ± 1.09	Fatalistic
Blamed your self for getting into such a situation	29	0	3	1.14 ± 0.83	Emotive
Put off facing up to the problem	40	0	3	1.10 ± 0.81	Evasive
Tried to ignore or avoid the problem	37	0	3	1.08 ± 0.83	Evasive
Told yourself that the problem was someone else's fault	21	0	2	1.05 ± 0.74	Evasive
Did something impulsive or risky that you would not usually do	11	0	2	1.00 ± 1.00	Emotive
Resigned yourself to the situation because things looked hopeless	23	0	2	1.00 ± 0.74	Fatalistic
Ate or smoked more than usual	20	0	3	1.00 ± 0.97	Palliative
Expected the worst that could happen	43	0	3	1.00 ± 0.93	Fatalistic
Waited to see what would happen	41	0	3	0.95 ± 0.89	Evasive
Got mad and let off steam	58	0	3	0.90 ± 0.99	Emotive
Wished that the problem would go away	38	0	3	0.89 ± 0.83	Evasive
Worried about the problem	50	0	2	0.32 ± 0.62	Emotive

Appendix J
Rank ordered of the means ± SD of perceived effectiveness of coping strategies by DM group

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	57	1	3	2.70 ± 0.57	Supportant
Tried to find out more about the problem	43	1	3	2.05 ± 0.75	Confrontive
Talked the problem over with someone who had been in a similar situation	47	0	3	2.00 ± 0.81	Supportant
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	48	1	3	1.98 ± 0.67	Supportant
Tried to improve yourself in some way so you could handle the situation better	39	1	3	1.90 ± 0.64	Self-reliant
Talked the problem over with family or friends	48	0	3	1.90 ± 0.90	Supportant
Tried to work out a compromise	39	0	3	1.87 ± 0.80	Confrontive
Learned something new in order to deal with the problem better	38	1	3	1.87 ± 0.70	Confrontive
Exercised or did some physical activity	38	0	3	1.87 ± 0.99	Palliative
Used relaxation techniques	49	0	3	1.86 ± 0.74	Palliative
Tried to keep the situation under control	51	0	3	1.84 ± 0.86	Confrontive
Compared yourself with other people who were in the same situation	41	0	3	1.83 ± 0.70	Optimistic
Tried to keep your life as normal as possible and not let the problem interfere	52	0	3	1.83 ± 0.83	Optimistic
Tried to keep your feelings under control	44	0	3	1.82 ± 0.87	Self-reliant
Tried to look at the problem objectively and see all sides	44	0	3	1.82 ± 0.90	Confrontive
Tried to keep busy	47	0	3	1.81 ± 0.77	Palliative
Avoided being with people	20	0	3	1.80 ± 0.83	Evasive

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to think positively	46	0	3	1.78 ± 0.73	Optimistic
Thought about how you had handled other problems in the past	37	0	3	1.76 ± 0.86	Self-reliant
Thought about the good things in your life	49	0	3	1.76 ± 0.78	Optimistic
Tried to keep a sense of humor	46	1	3	1.74 ± 0.65	Optimistic
Tried to handle things one step at a time	45	0	3	1.71 ± 0.76	Confrontive
Hoped that things would get better	47	0	3	1.70 ± 0.75	Optimistic
Tried to put the problem out of your mind and think of something else	45	0	3	1.69 ± 0.76	Evasive
Tried to see the good side of the situation	38	0	3	1.68 ± 0.87	Optimistic
Set up a plan of action	40	0	3	1.67 ± 0.76	Confrontive
Took medications to reduce tension	17	0	3	1.65 ± 1.06	Palliative
Thought out different ways to handle the situation	46	0	3	1.61 ± 0.86	Confrontive
Told yourself not to worry because everything would work out fine	47	0	3	1.60 ± 0.88	Optimistic
Tried to change the situation	42	0	3	1.60 ± 0.89	Confrontive
Practiced in your mind what had to be done	32	0	3	1.59 ± 0.91	Confrontive
Told yourself that you could handle anything no matter how hard	48	0	3	1.58 ± 0.82	Self-reliant
Told yourself that things could be much worse	45	0	3	1.58 ± 0.94	Optimistic
Kept your feelings to yourself	41	0	3	1.56 ± 0.87	Self-reliant
Tried to distract yourself by doing something that you enjoy	43	0	3	1.56 ± 0.73	Palliative
Tried to get away from the problem for a while	47	0	3	1.55 ± 0.88	Evasive
Accepted the situation because very little could be done	56	0	3	1.54 ± 0.83	Fatalistic
Tried to get out of the situation	47	0	3	1.49 ± 0.72	Evasive

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Preferred to work things out yourself	43	0	3	1.49 ± 0.67	Self-reliant
Tried to ignore or avoid the problem	37	0	3	1.43 ± 0.87	Evasive
Depended on others to help you out	44	0	3	1.43 ± 0.66	Supportant
Told yourself that this problem was really not that important	42	0	3	1.40 ± 0.83	Evasive
Told yourself that you were just having some bad luck	20	0	3	1.40 ± 1.10	Fatalistic
Wanted to be alone to think things out	34	0	3	1.38 ± 0.74	Self-reliant
Let time take care of the problem	39	0	3	1.33 ± 0.77	Evasive
Blamed your self for getting into such a situation	25	0	3	1.28 ± 0.84	Emotive
Day dreamed about a better life	36	0	3	1.28 ± 0.94	Evasive
Took out your tensions on someone else	28	0	3	1.25 ± 0.89	Emotive
Did something impulsive or risky that you would not usually do	14	0	3	1.21 ± 1.05	Emotive
Slept more than usual	30	0	3	1.17 ± 0.87	Palliative
Put off facing up to the problem	38	0	3	1.13 ± 0.78	Evasive
Ate or smoked more than usual	12	0	2	1.08 ± 1.00	Palliative
Wished that the problem would go away	42	0	3	1.05 ± 0.88	Evasive
Got mad and let off steam	44	0	3	1.05 ± 0.94	Emotive
Waited to see what would happen	40	0	3	1.03 ± 0.86	Evasive
Expected the worst that could happen	40	0	3	1.02 ± 0.92	Fatalistic
Took a drink to make yourself feel better	6	0	2	1.00 ± 0.89	Palliative
Resigned yourself to the situation because things looked hopeless	24	0	3	1.00 ± 0.88	Fatalistic
Worried about the problem	43	0	3	0.91 ± 1.09	Emotive
Told yourself that the problem was someone else's fault	15	0	2	0.80 ± 0.77	Evasive

Appendix K
Rank ordered of the means ± SD of perceived effectiveness of coping strategies by mixed group

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	52	1	3	2.58 ± 0.72	Supportant
Thought about the good things in your life	44	0	3	2.25 ± 0.78	Optimistic
Used relaxation techniques	40	1	3	2.20 ± 0.65	Palliative
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	45	0	3	2.11 ± 0.86	Supportant
Tried to keep a sense of humor	49	0	3	2.06 ± 0.83	Optimistic
Talked the problem over with someone who had been in a similar situation	43	0	3	2.05 ± 0.72	Supportant
Tried to keep your life as normal as possible and not let the problem interfere	49	0	3	2.04 ± 0.84	Optimistic
Tried to find out more about the problem	42	1	3	2.02 ± 0.78	Confrontive
Tried to keep the situation under control	42	0	3	2.02 ± 0.92	Confrontive
Tried to handle things one step at a time	44	1	3	1.98 ± 0.73	Confrontive
Tried to improve yourself in some way so you could handle the situation better	44	0	3	1.95 ± 0.71	Self-reliant
Learned something new in order to deal with the problem better	35	0	3	1.94 ± 0.76	Confrontive
Hoped that things would get better	49	0	3	1.94 ± 0.88	Optimistic
Exercised or did some physical activity	34	0	3	1.91 ± 1.00	Palliative
Thought about how you had handled other problems in the past	34	1	3	1.91 ± 0.71	Self-reliant
Told yourself not to worry because everythin g would work out fine	42	0	3	1.90 ± 0.76	Optimistic
Tried to work out a compromise	39	0	3	1.90 ± 0.72	Confrontive

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to think positively	43	0	3	1.86 ± 0.83	Optimistic
Set up a plan of action	34	0	3	1.82 ± 0.87	Confrontive
Tried to look at the problem objectively and see all sides	36	0	3	1.81 ± 0.75	Confrontive
Told yourself that you could handle anything no matter how hard	40	0	3	1.80 ± 0.76	Self-reliant
Talked the problem over with family or friends	45	0	3	1.80 ± 0.81	Supportant
Tried to distract yourself by doing something that you enjoy	46	0	3	1.78 ± 0.81	Palliative
Tried to keep busy	42	0	3	1.76 ± 0.69	Palliative
Avoided being with people	21	0	3	1.76 ± 1.00	Evasive
Thought out different ways to handle the situation	40	0	3	1.75 ± 0.90	Confrontive
Accepted the situation because very little could be done	47	0	3	1.72 ± 0.85	Fatalistic
Tried to change the situation	43	0	3	1.72 ± 0.83	Confrontive
Compared yourself with other people who were in the same situation	38	0	3	1.71 ± 0.77	Optimistic
Tried to get out of the situation	44	0	3	1.70 ± 0.82	Evasive
Day dreamed about a better life	33	0	3	1.70 ± 0.88	Evasive
Tried to get away from the problem for a while	39	0	3	1.69 ± 0.89	Evasive
Tried to put the problem out of your mind and think of something else	44	0	3	1.68 ± 0.77	Evasive
Practiced in your mind what had to be done	28	0	3	1.68 ± 0.77	Confrontive
Preferred to work things out yourself	46	0	3	1.67 ± 0.87	Self-reliant
Tried to keep your feelings under control	45	0	3	1.67 ± 0.80	Supportant
Kept your feelings to yourself	41	0	3	1.66 ± 0.79	Supportant
Tried to see the good side of the situation	43	0	3	1.63 ± 0.98	Optimistic

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Told yourself that this problem was really not that important	31	0	3	1.58 ± 0.67	Evasive
Wanted to be alone to think things out	35	0	3	1.57 ± 0.88	Self-reliant
Depended on others to help you out	42	0	3	1.57 ± 0.70	Supportant
Told yourself that things could be much worse	47	0	3	1.51 ± 0.93	Optimistic
Slept more than usual	20	0	2	1.50 ± 0.61	Palliative
Resigned yourself to the situation because things looked hopeless	24	0	3	1.50 ± 0.83	Fatalistic
Took medications to reduce tension	16	0	3	1.50 ± 0.89	Palliative
Tried to ignore or avoid the problem	33	0	3	1.48 ± 0.71	Evasive
Put off facing up to the problem	28	0	3	1.43 ± 0.74	Evasive
Told yourself that the problem was someone else's fault	18	0	3	1.39 ± 0.92	Evasive
Took out your tensions on someone else	31	0	3	1.39 ± 0.80	Emotive
Let time take care of the problem	30	0	3	1.27 ± 0.78	Evasive
Did something impulsive or risky that you would not usually do	8	0	2	1.25 ± 0.71	Emotive
Wished that the problem would go away	35	0	3	1.23 ± 0.94	Evasive
Told yourself that you were just having some bad luck	20	0	2	1.20 ± 0.62	Fatalistic
Waited to see what would happen	32	0	2	1.13 ± 0.75	Evasive
Ate or smoked more than usual	15	0	3	1.07 ± 1.10	Palliative
Expected the worst that could happen	39	0	3	1.05 ± 0.92	Fatalistic
Blamed your self for getting into such a situation	17	0	2	1.00 ± 0.71	Emotive
Got mad and let off steam	35	0	3	0.89 ± 0.83	Emotive
Took a drink to make yourself feel better	7	0	1	0.86 ± 0.38	Palliative
Worried about the problem	41	0	3	0.66 ± 0.94	Emotive

Appendix L
Rank ordered means ± SD of used coping strategies by men

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	114	1	3	2.82 ± 0.47	Supportant
Got mad and let off steam	86	1	3	2.40 ± 0.66	Emotive
Told yours elf that things could be much worse	87	1	3	2.34 ± 0.71	Optimistic
Hoped that things would get better	102	1	3	2.34 ± 0.71	Optimistic
Worried about the problem	72	1	3	2.32 ± 0.69	Emotive
Thought about the good things in your life	96	1	3	2.29 ± 0.71	Optimistic
Day dreamed about a better life	59	1	3	2.29 ± 0.72	Evasive
Accepted the situation because very little could be done	101	1	3	2.29 ± 0.71	Fatalistic
Avoided being with people	45	1	3	2.27 ± 0.81	Evasive
Tried to get away from the problem for a while	83	1	3	2.27 ± 0.73	Evasive
Kept your feelings to yourself	76	1	3	2.25 ± 0.79	Self-reliant
Tried to put the problem out of your mind and think of something else	88	1	3	2.20 ± 0.70	Evasive
Ate or smoked more than usual	34	1	3	2.18 ± 0.87	Palliative
Tried to keep the situation under control	92	1	3	2.17 ± 0.75	Confrontive
Compared yourself with other people who were in the same situation	77	1	3	2.14 ± 0.66	Optimistic
Tried to find out more about the problem	77	1	3	2.14 ± 0.76	Confrontive
Tried to distract yourself by doing something that you enjoy	86	1	3	2.14 ± 0.67	Palliative
Set up a plan of action	71	1	3	2.13 ± 0.79	Confrontive
Used relaxation techniques	88	1	3	2.12 ± 0.69	Palliative
Thought about how you had handled other problems in the past	60	1	3	2.12 ± 0.69	Self-reliant
Tried to ignore or avoid the problem	61	1	3	2.11 ± 0.71	Evasive

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to keep your feelings under control	90	1	3	2.11 ± 0.68	Self-reliant
Tried to keep your life as normal as possible and not let the problem interfere	100	1	3	2.11 ± 0.68	Optimistic
Wanted to be alone to think things out	59	1	3	2.10 ± 0.78	Self-reliant
Tried to work out a compromise	59	1	3	2.10 ± 0.61	Confrontive
Preferred to work things out yourself	89	1	3	2.10 ± 0.66	Self-reliant
Talked the problem over with someone who had been in a similar situation	76	1	3	2.09 ± 0.66	Supportant
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	94	1	3	2.07 ± 0.69	Supportant
Talked the problem over with family or friends	87	1	3	2.07 ± 0.73	Supportant
Tried to look at the problem objectively and see all sides	80	1	3	2.05 ± 0.73	Confrontive
Tried to handle things one step at a time	79	1	3	2.04 ± 0.78	Confrontive
Expected the worst that could happen	66	1	3	2.03 ± 0.72	Fatalistic
Tried to get out of the situation	77	1	3	2.03 ± 0.61	Evasive
Tried to keep a sense of humor	94	1	3	2.02 ± 0.67	Optimistic
Took out your tensions on someone else	53	1	3	2.02 ± 0.77	Emotive
Thought out different ways to handle the situation	74	1	3	2.01 ± 0.75	Confrontive
Put off facing up to the problem	54	1	3	2.00 ± 0.70	Evasive
Resigned yourself to the situation because things looked hopeless	34	1	3	2.00 ± 0.70	Fatalistic
Told yourself not to worry because everything would work out fine	98	1	3	2.00 ± 0.67	Optimistic
Told yourself that you could handle anything no matter how hard	85	1	3	1.99 ± 0.76	Self-reliant
Tried to see the good side of the situation	81	1	3	1.99 ± 0.62	Optimistic
Waited to see what would happen	58	1	3	1.98 ± 0.81	Evasive

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to improve yourself in some way so you could handle the situation better	72	1	3	1.97 ± 0.65	Self-reliant
Depended on others to help you out	83	1	3	1.96 ± 0.65	Supportant
Tried to keep busy	81	1	3	1.96 ± 0.66	Palliative
Slept more than usual	43	1	3	1.95 ± 0.79	Palliative
Told yourself that this problem was really not that important	74	1	3	1.95 ± 0.70	Evasive
Tried to think positively	82	1	3	1.91 ± 0.76	Optimistic
Told yourself that the problem was someone else's fault	27	1	3	1.89 ± 0.70	Evasive
Tried to change the situation	81	1	3	1.85 ± 0.74	Confrontive
Blamed your self for getting into such a situation	42	1	3	1.83 ± 0.76	Emotive
Wished that the problem would go away	60	1	3	1.80 ± 0.63	Evasive
Let time take care of the problem	57	1	3	1.79 ± 0.70	Evasive
Exercised or did some physical activity	73	1	3	1.78 ± 0.75	Palliative
Practiced in your mind what had to be done	45	1	3	1.78 ± 0.74	Confrontive
Learned something new in order to deal with the problem better	56	1	3	1.75 ± 0.64	Confrontive
Did something impulsive or risky that you would not usually do	19	1	3	1.74 ± 0.65	Emotive
Told yourself that you were just having some bad luck	24	1	3	1.67 ± 0.76	Fatalistic
Took medications to reduce tension	23	1	3	1.65 ± 0.65	Palliative
Took a drink to make yourself feel better	10	1	2	1.60 ± 0.52	Palliative

Appendix M
Rank ordered means ± SD of used coping strategies by women

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	70	1	3	2.86 ± 0.39	Supportant
Worried about the problem	63	1	3	2.32 ± 0.74	Emotive
Thought about the good things in your life	65	1	3	2.31 ± 0.73	Optimistic
Ate or smoked more than usual	13	1	3	2.23 ± 0.60	Palliative
Tried to keep a sense of humor	63	1	3	2.19 ± 0.62	Optimistic
Told yours elf that things could be much worse	63	1	3	2.19 ± 0.62	Optimistic
Tried to keep busy	64	1	3	2.19 ± 0.71	Palliative
Took out your tensions on someone else	38	1	3	2.16 ± 0.79	Emotive
Tried to keep your life as normal as possible and not let the problem interfere	69	1	3	2.14 ± 0.69	Optimistic
Told yourself not to worry because everything would work out fine	57	1	3	2.14 ± 0.72	Optimistic
Hoped that things would get better	66	1	3	2.14 ± 0.70	Optimistic
Tried to look at the problem objectively and see all sides	45	1	3	2.13 ± 0.69	Optimistic
Accepted the situation because very little could be done	67	1	3	2.10 ± 0.78	Fatalistic
Talked the problem over with family or friends	60	1	3	2.10 ± 0.77	Supportant
Talked the problem over with someone who had been in a similar situation	62	1	3	2.08 ± 0.64	Supportant
Day dreamed about a better life	55	1	3	2.07 ± 0.72	Evasive
Expected the worst that could happen	56	1	3	2.07 ± 0.71	Fatalistic
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	57	1	3	2.07 ± 0.73	Supportant
Tried to find out more about the problem	53	1	3	2.06 ± 0.69	Confrontive
Tried to keep your feelings under control	55	1	3	2.05 ± 0.76	Self-reliant

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to keep the situation under control	56	1	3	2.04 ± 0.76	Confrontive
Got mad and let off steam	51	1	3	2.02 ± 0.84	Emotive
Thought out different ways to handle the situation	55	1	3	2.02 ± 0.83	Confrontive
Took medications to reduce tension	23	1	3	2.00 ± 0.80	Palliative
Compared yourself with other people who were in the same situation	54	1	3	2.00 ± 0.58	Optimistic
Kept your feelings to yourself	51	1	3	2.00 ± 0.77	Self-reliant
Tried to distract yourself by doing something that you enjoy	63	1	3	1.98 ± 0.73	Palliative
Tried to think positively	57	1	3	1.98 ± 0.74	Optimistic
Avoided being with people	30	1	3	1.97 ± 0.72	Evasive
Depended on others to help you out	57	1	3	1.96 ± 0.65	Supportant
Used relaxation techniques	56	1	3	1.96 ± 0.63	Palliative
Wished that the problem would go away	55	1	3	1.95 ± 0.68	Evasive
Put off facing up to the problem	52	1	3	1.94 ± 0.73	Evasive
Slept more than usual	32	1	3	1.94 ± 0.76	Palliative
Practiced in your mind what had to be done	45	1	3	1.93 ± 0.84	Confrontive
Told yourself that you were just having some bad luck	29	1	3	1.93 ± 0.75	Fatalistic
Tried to handle things one step at a time	57	1	3	1.93 ± 0.75	Confrontive
Wanted to be alone to think things out	57	1	3	1.93 ± 0.73	Self-reliant
Waited to see what would happen	55	1	3	1.93 ± 0.60	Evasive
Tried to ignore or avoid the problem	46	1	3	1.91 ± 0.66	Evasive
Learned something new in order to deal with the problem better	46	1	3	1.91 ± 0.66	Confrontive
Tried to work out a compromise	49	1	3	1.90 ± 0.71	Confrontive
Tried to put the problem out of your mind and think of something else	58	1	3	1.90 ± 0.72	Evasive
Tried to change the situation	57	1	3	1.89 ± 0.84	Confrontive
Tried to get away from the problem for a while	54	1	3	1.89 ± 0.72	Evasive

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Thought about how you had handled other problems in the past	50	1	3	1.88 ± 0.75	Self-reliant
Set up a plan of action	40	1	3	1.87 ± 0.82	Confrontive
Tried to get out of the situation	62	1	3	1.87 ± 0.78	Evasive
Told yourself that you could handle anything no matter how hard	51	1	3	1.86 ± 0.80	Self-reliant
Blamed your self for getting into such a situation	29	1	3	1.86 ± 0.88	Emotive
Tried to improve yourself in some way so you could handle the situation better	60	1	3	1.83 ± 0.74	Self-reliant
Preferred to work things out yourself	54	1	3	1.80 ± 0.79	Self-reliant
Tried to see the good side of the situation	56	1	3	1.77 ± 0.81	Optimistic
Told yourself that this problem was really not that important	48	1	3	1.75 ± 0.67	Evasive
Told yourself that the problem was someone else's fault	27	1	3	1.70 ± 0.67	Evasive
Exercised or did some physical activity	45	1	3	1.67 ± 0.83	Palliative
Let time take care of the problem	46	1	3	1.65 ± 0.67	Evasive
Resigned yourself to the situation because things looked hopeless	37	1	3	1.59 ± 0.64	Fatalistic
Took a drink to make yourself feel better	9	1	2	1.44 ± 0.53	Palliative
Did something impulsive or risky that you would not usually do	14	1	3	1.29 ± 0.61	Emotive

Appendix N
Rank ordered means ± SD of perceived effectiveness of coping strategies by men

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	114	1	3	2.70 ± 0.56	Supportant
Used relaxation techniques	88	0	3	2.14 ± 0.80	Palliative
Tried to find out more about the problem	77	1	3	2.10 ± 0.82	Confrontive
Set up a plan of action	71	0	3	2.04 ± 0.82	Confrontive
Avoided being with people	45	0	3	2.02 ± 0.94	Evasive
Hoped that things would get better	102	0	3	2.02 ± 0.83	Optimistic
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	93	0	3	1.99 ± 0.81	Supportant
Tried to work out a compromise	59	0	3	1.98 ± 0.68	Confrontive
Thought about how you had handled other problems in the past	60	0	3	1.97 ± 0.76	Self-reliant
Talked the problem over with someone who had been in a similar situation	77	0	3	1.95 ± 0.72	Supportant
Tried to keep the situation under control	92	0	3	1.91 ± 0.93	Confrontive
Tried to handle things one step at a time	79	0	3	1.91 ± 0.79	Confrontive
Tried to distract yourself by doing something that you enjoy	86	0	3	1.91 ± 0.82	Palliative
Tried to keep your life as normal as possible and not let the problem interfere	101	0	3	1.89 ± 0.87	Optimistic
Learned something new in order to deal with the problem better	56	0	3	1.87 ± 0.69	Confrontive
Tried to look at the problem objectively and see all sides	80	0	3	1.87 ± 0.86	Confrontive
Exercised or did some physical activity	73	0	3	1.85 ± 0.88	Palliative
Tried to improve yourself in some way so you could handle the situation better	72	1	3	1.83 ± 0.67	Self-reliant

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Compared yourself with other people who were in the same situation	77	0	3	1.83 ± 0.82	Optimistic
Thought about the good things in your life	96	0	3	1.82 ± 0.96	Optimistic
Tried to keep busy	81	0	3	1.81 ± 0.73	Palliative
Told yourself that you could handle anything no matter how hard	85	0	3	1.80 ± 0.81	Self-reliant
Tried to think positively	82	0	3	1.79 ± 0.68	Optimistic
Tried to keep a sense of humor	95	0	3	1.77 ± 0.79	Optimistic
Tried to see the good side of the situation	81	0	3	1.77 ± 0.83	Optimistic
Talked the problem over with family or friends	87	0	3	1.76 ± 0.86	Supportant
Preferred to work things out yourself	89	0	3	1.75 ± 0.80	Self-reliant
Slept more than usual	43	0	3	1.74 ± 0.90	Palliative
Practiced in your mind what had to be done	45	0	3	1.73 ± 0.78	Confrontive
Kept your feelings to yourself	76	0	3	1.72 ± 0.74	Self-reliant
Thought out different ways to handle the situation	74	0	3	1.72 ± 0.90	Confrontive
Tried to put the problem out of your mind and think of something else	88	0	3	1.72 ± 0.77	Evasive
Told yourself not to worry because everything would work out fine	98	0	3	1.68 ± 0.93	Optimistic
Tried to change the situation	81	0	3	1.68 ± 0.85	Confrontive
Tried to get away from the problem for a while	83	0	3	1.64 ± 0.92	Evasive
Tried to keep your feelings under control	90	0	3	1.63 ± 0.81	Self-reliant
Told yours elf that things could be much worse	87	0	3	1.63 ± 0.95	Optimistic
Tried to get out of the situation	77	0	3	1.62 ± 0.76	Evasive
Took medications to reduce tension	23	0	3	1.61 ± 0.99	Palliative
Accepted the situation because very little could be done	101	0	3	1.58 ± 0.85	Fatalistic

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Told yourself that this problem was really not that important	74	0	3	1.57 ± 0.86	Evasive
Depended on others to help you out	83	0	3	1.55 ± 0.70	Supportant
Wanted to be alone to think things out	59	0	3	1.54 ± 0.99	Self-reliant
Day dreamed about a better life	59	0	3	1.42 ± 1.04	Evasive
Took out your tensions on someone else	53	0	3	1.36 ± 0.94	Emotive
Took a drink to make yourself feel better	10	0	2	1.30 ± 0.67	Palliative
Tried to ignore or avoid the problem	61	0	3	1.23 ± 0.90	Evasive
Let time take care of the problem	57	0	3	1.23 ± 0.89	Evasive
Resigned yourself to the situation because things looked hopeless	34	0	3	1.15 ± 0.89	Fatalistic
Did something impulsive or risky that you would not usually do	19	0	3	1.05 ± 1.03	Emotive
Told yourself that you were just having some bad luck	24	0	3	1.04 ±0.91	Fatalistic
Blamed your self for getting into such a situation	42	0	3	1.02 ±0.81	Emotive
Put off facing up to the problem	54	0	3	1.02 ±0.88	Evasive
Expected the worst that could happen	66	0	3	0.98 ±0.92	Fatalistic
Waited to see what would happen	58	0	3	0.98 ±0.89	Evasive
Told yourself that the problem was someone else's fault	27	0	3	0.96 ± 0.85	Evasive
Ate or smoked more than usual	34	0	3	0.91 ± 0.90	Palliative
Wished that the problem would go away	60	0	3	0.90 ± 0.84	Evasive
Got mad and let off steam	86	0	3	0.78 ± 0.95	Emotive
Worried about the problem	71	0	3	0.49 ± 0.86	Emotive

Appendix O
Rank ordered means ± SD of perceived effectiveness by women

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	70	1	3	2.63 ± 0.66	Supportant
Talked the problem over with someone who had been in a similar situation	62	0	3	2.10 ± 0.72	Supportant
Tried to keep a sense of humor	63	0	3	2.00 ± 0.80	Optimistic
Tried to find out more about the problem	53	1	3	2.00 ± 0.71	Confrontive
Used relaxation techniques	56	1	3	1.96 ± 0.66	Palliative
Talked the problem over with family or friends	60	0	3	1.93 ± 0.86	Supportant
Tried to keep your life as normal as possible and not let the problem interfere	69	0	3	1.93 ± 0.86	Optimistic
Tried to look at the problem objectively and see all sides	45	0	3	1.91 ± 0.76	Confrontive
Thought about the good things in your life	65	0	3	1.91 ± 0.82	Optimistic
Tried to handle things one step at a time	57	0	3	1.89 ± 0.77	Confrontive
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	57	0	3	1.89 ± 0.84	Supportant
Tried to think positively	57	0	3	1.86 ± 0.81	Optimistic
Compared yourself with other people who were in the same situation	54	0	3	1.85 ± 0.66	Optimistic
Learned something new in order to deal with the problem better	46	0	3	1.85 ± 0.79	Confrontive
Tried to keep the situation under control	56	0	3	1.82 ± 0.92	Confrontive
Tried to improve yourself in some way so you could handle the situation better	60	0	3	1.82 ± 0.72	Self-reliant
Tried to work out a compromise	49	0	3	1.82 ± 0.75	Confrontive
Thought about how you had handled other problems in the past	50	0	3	1.78 ± 0.82	Self-reliant
Exercised or did some physical activity	45	0	3	1.76 ± 0.96	Palliative

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to keep busy	64	0	3	1.73 ± 0.74	Palliative
Hoped that things would get better	66	0	3	1.73 ± 0.80	Optimistic
Tried to keep your feelings under control	55	0	3	1.73 ± 0.83	Self-reliant
Set up a plan of action	40	0	3	1.73 ± 0.82	Confrontive
Told yourself not to worry because everything would work out fine	57	0	3	1.72 ± 0.70	Optimistic
Tried to distract yourself by doing something that you enjoy	63	0	3	1.71 ± 0.81	Palliative
Told yourself that you could handle anything no matter how hard	51	0	3	1.71 ± 0.86	Self-reliant
Accepted the situation because very little could be done	67	0	3	1.69 ± 0.91	Fatalistic
Practiced in your mind what had to be done	44	0	3	1.68 ± 0.96	Confrontive
Tried to get away from the problem for a while	54	0	3	1.67 ± 0.80	Evasive
Tried to put the problem out of your mind and think of something else	58	0	3	1.66 ± 0.71	Evasive
Thought out different ways to handle the situation	55	0	3	1.65 ± 0.82	Confrontive
Took medications to reduce tension	23	0	3	1.65 ± 0.88	Palliative
Tried to get out of the situation	62	0	3	1.65 ± 0.77	Evasive
Tried to see the good side of the situation	56	0	3	1.64 ± 0.98	Optimistic
Day dreamed about a better life	55	0	3	1.62 ± 0.83	Evasive
Avoided being with people	30	0	3	1.57 ± 0.97	Evasive
Tried to change the situation	57	0	3	1.56 ± 0.93	Confrontive
Depended on others to help you out	57	0	3	1.51 ± 0.68	Supportant
Told yourself that things could be much worse	63	0	3	1.49 ± 0.90	Optimistic
Told yourself that you were just having some bad luck	29	0	3	1.48 ± 0.91	Fatalistic
Tried to ignore or avoid the problem	46	0	3	1.46 ± 0.69	Evasive
Kept your feelings to yourself	51	0	3	1.43 ± 0.90	Self-reliant

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Preferred to work things out yourself	54	0	3	1.43 ± 0.81	Self-reliant
Wanted to be alone to think things out	57	0	3	1.42 ± 0.71	Self-reliant
Ate or smoked more than usual	13	0	3	1.38 ± 1.19	Palliative
Put off facing up to the problem	52	0	3	1.38 ± 0.63	Evasive
Let time take care of the problem	46	0	3	1.35 ± 0.64	Evasive
Blamed your self for getting into such a situation	29	0	3	1.34 ± 0.77	Emotive
Took out your tensions on someone else	38	0	3	1.34 ± 0.81	Emotive
Told yourself that this problem was really not that important	48	0	3	1.31 ± 0.75	Evasive
Did something impulsive or risky that you would not usually do	14	0	3	1.29 ± 0.83	Emotive
Told yourself that the problem was someone else's fault	27	0	3	1.22 ± 0.80	Evasive
Wished that the problem would go away	55	0	3	1.22 ± 0.92	Evasive
Got mad and let off steam	51	0	3	1.22 ± 0.83	Emotive
Resigned yourself to the situation because things looked hopeless	37	0	3	1.19 ± 0.81	Fatalistic
Slept more than usual	32	0	2	1.16 ± 0.72	Palliative
Waited to see what would happen	55	0	3	1.07 ± 0.79	Evasive
Expected the worst that could happen	56	0	3	1.07 ± 0.91	Fatalistic
Took a drink to make yourself feel better	9	0	2	0.89 ± 0.78	Palliative
Worried about the problem	63	0	3	0.75 ± 0.97	Emotive

Appendix P
Rank ordered means ± SD of used coping strategies by subjects with one chronic illness

Coping strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	47	2	3	2.89 ± 0.31	Supportant
Ate or smoked more than usual	10	1	3	2.50 ±0.71	Palliative
Worried about the problem	31	1	3	2.45 ± 0.68	Emotive
Avoided being with people	18	1	3	2.44 ± 0.78	Evasive
Hoped that things would get better	42	1	3	2.36 ± 0.69	Optimistic
Got mad and let off steam	34	1	3	2.35 ± 0.73	Emotive
Told yourself that things could be much worse	37	1	3	2.35 ± 0.72	Optimistic
Accepted the situation because very little could be done	42	1	3	2.29 ± 0.71	Fatalistic
Tried to ignore or avoid the problem	21	1	3	2.29 ± 0.64	Evasive
Tried to get away from the problem for a while	34	1	3	2.26 ± 0.79	Evasive
Set up a plan of action	26	1	3	2.23 ± 0.71	Confrontive
Thought about the good things in your life	41	1	3	2.22 ± 0.76	Optimistic
Day dreamed about a better life	24	1	3	2.21 ± 0.66	Evasive
Tried to look at the problem objectively and see all sides	30	1	3	2.20 ± 0.71	Confrontive
Kept your feelings to yourself	31	1	3	2.19 ± 0.83	Self-reliant
Waited to see what would happen	23	1	3	2.17 ± 0.78	Evasive
Tried to keep the situation under control	35	1	3	2.17 ± 0.71	Confrontive
Used relaxation techniques	38	1	3	2.16 ± 0.72	Palliative
Tried to find out more about the problem	32	1	3	2.16 ± 0.72	Confrontive
Tried to put the problem out of your mind and think of something else	33	1	3	2.15 ± 0.67	Evasive
Wanted to be alone to think things out	22	1	3	2.14 ± 0.83	Self-reliant

Coping strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to keep your life as normal as possible and not let the problem interfere	42	1	3	2.12 ± 0.63	Optimistic
Tried to distract yourself by doing something that you enjoy	37	1	3	2.11 ± 0.74	Palliative
Tried to keep your feelings under control	34	1	3	2.09 ± 0.71	Self-reliant
Tried to work out a compromise	20	1	3	2.05 ± 0.60	Confrontive
Put off facing up to the problem	22	1	3	2.05 ± 0.65	Evasive
Tried to keep a sense of humor	35	1	3	2.03 ± 0.66	Palliative
Tried to keep busy	36	1	3	2.03 ± 0.70	Palliative
Preferred to work things out yourself	38	1	3	2.03 ± 0.68	Self-reliant
Took medications to reduce tension	3	1	3	2.00 ± 1.00	Palliative
Tried to think positively	32	1	3	2.00 ± 0.76	Optimistic
Tried to handle things one step at a time	30	1	3	2.00 ± 0.79	Confrontive
Talked the problem over with family or friends	31	1	3	2.00 ± 0.73	Supportant
Told yourself not to worry because everything would work out fine	41	1	3	1.98 ± 0.65	Optimistic
Depended on others to help you out	35	1	3	1.97 ± 0.57	Supportant
Tried to improve yourself in some way so you could handle the situation better	30	1	3	1.97 ± 0.61	Self-reliant
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	38	1	3	1.95 ± 0.66	Supportant
Compared yourself with other people who were in the same situation	27	1	3	1.93 ± 0.47	Optimistic
Talked the problem over with someone who had been in a similar situation	26	1	3	1.92 ± 0.56	Supportant
Told yourself that you could handle anything no matter how hard	32	1	3	1.91 ± 0.78	Self-reliant
Took out your tensions on someone else	18	1	3	1.89 ± 0.90	Emotive
Expected the worst that could happen	26	1	3	1.88 ± 0.65	Fatalistic
Practiced in your mind what had to be done	16	1	3	1.88 ± 0.72	Confrontive

Coping strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Told yourself that this problem was really not that important	30	1	3	1.87 ± 0.63	Evasive
Learned something new in order to deal with the problem better	22	1	3	1.86 ± 0.64	Confrontive
Let time take care of the problem	22	1	3	1.86 ± 0.71	Evasive
Told yourself that you were just having some bad luck	6	1	3	1.83 ± 0.75	Fatalistic
Blamed your self for getting into such a situation	16	1	3	1.81 ± 0.75	Emotive
Tried to see the good side of the situation	30	1	3	1.80 ± 0.66	Optimistic
Tried to change the situation	33	1	3	1.79 ± 0.70	Confrontive
Tried to get out of the situation	31	1	3	1.77 ± 0.50	Evasive
Slept more than usual	17	1	3	1.76 ± 0.83	Palliative
Thought out different ways to handle the situation	27	1	3	1.74 ± 0.71	Confrontive
Wished that the problem would go away	23	1	3	1.74 ± 0.62	Evasive
Thought about how you had handled other problems in the past	23	1	3	1.74 ± 0.62	Self-reliant
Exercised or did some physical activity	34	1	3	1.74 ± 0.71	Palliative
Did something impulsive or risky that you would not usually do	10	1	3	1.70 ± 0.82	Emotive
Told yourself that the problem was someone else's fault	10	1	3	1.60 ± 0.84	Evasive
Resigned yourself to the situation because things looked hopeless	12	1	3	1.58 ± 0.67	Fatalistic
Took a drink to make yourself feel better	4	1	2	1.50 ± 0.58	Palliative

Appendix Q

Rank ordered means ± SD of used coping strategies by subjects with two or more chronic illnesses

Coping strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	137	1	3	2.81 ± 0.48	Supportant
Thought about the good things in your life	120	1	3	2.32 ± 0.70	Optimistic
Worried about the problem	104	1	3	2.28 ± 0.72	Emotive
Told yourself that things could be much worse	113	1	3	2.26 ± 0.67	Optimistic
Hoped that things would get better	126	1	3	2.23 ± 0.72	Optimistic
Got mad and let off steam	103	1	3	2.22 ± 0.75	Emotive
Accepted the situation because very little could be done	126	1	3	2.19 ± 0.76	Fatalistic
Day dreamed about a better life	90	1	3	2.18 ± 0.74	Evasive
Kept your feelings to yourself	96	1	3	2.14 ± 0.78	Self-reliant
Tried to keep your life as normal as possible and not let the problem interfere	127	1	3	2.13 ± 0.70	Optimistic
Compared yourself with other people who were in the same situation	104	1	3	2.13 ± 0.66	Optimistic
Talked the problem over with someone who had been in a similar situation	112	1	3	2.12 ± 0.66	Supportant
Took out your tensions on someone else	73	1	3	2.12 ± 0.74	Emotive
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	113	1	3	2.12 ± 0.72	Supportant
Ate or smoked more than usual	37	1	3	2.11 ± 0.81	Palliative
Tried to keep a sense of humor	122	1	3	2.11 ± 0.65	Optimistic
Tried to keep the situation under control	113	1	3	2.11 ± 0.77	Confrontive
Talked the problem over with family or friends	116	1	3	2.10 ± 0.75	Supportant
Expected the worst that could happen	96	1	3	2.09 ± 0.73	Fatalistic

Coping strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to find out more about the problem	98	1	3	2.09 ± 0.73	Confrontive
Tried to keep your feelings under control	111	1	3	2.09 ± 0.71	Self-reliant
Thought out different ways to handle the situation	102	1	3	2.09 ± 0.78	Confrontive
Thought about how you had handled other problems in the past	87	1	3	2.08 ± 0.73	Self-reliant
Told yourself not to worry because everything would work out fine	114	1	3	2.08 ± 0.71	Optimistic
Tried to keep busy	109	1	3	2.07 ± 0.69	Palliative
Tried to get away from the problem for a while	103	1	3	2.07 ± 0.73	Evasive
Tried to distract yourself by doing something that you enjoy	112	1	3	2.06 ± 0.69	Palliative
Tried to put the problem out of your mind and think of something else	113	1	3	2.06 ± 0.74	Evasive
Avoided being with people	57	1	3	2.05 ± 0.77	Evasive
Tried to look at the problem objectively and see all sides	95	1	3	2.04 ± 0.71	Confrontive
Used relaxation techniques	106	1	3	2.03 ± 0.65	Palliative
Tried to get out of the situation	108	1	3	2.01 ± 0.73	Evasive
Tried to work out a compromise	88	1	3	2.00 ± 0.68	Confrontive
Slept more than usual	58	1	3	2.00 ± 0.75	Palliative
Tried to handle things one step at a time	106	1	3	1.99 ± 0.76	Confrontive
Wanted to be alone to think things out	94	1	3	1.99 ± 0.74	Self-reliant
Set up a plan of action	85	1	3	1.98 ± 0.83	Confrontive
Preferred to work things out yourself	105	1	3	1.97 ± 0.74	Self-reliant
Tried to ignore or avoid the problem	86	1	3	1.97 ± 0.69	Evasive
Depended on others to help you out	105	1	3	1.96 ± 0.68	Supportant
Put off facing up to the problem	84	1	3	1.95 ± 0.73	Evasive
Told yourself that you could handle anything no matter how hard	104	1	3	1.95 ± 0.78	Self-reliant
Tried to see the good side of the situation	107	1	3	1.93 ± 0.72	Optimistic

Coping strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to think positively	107	1	3	1.93 ± 0.75	Optimistic
Wished that the problem would go away	92	1	3	1.90 ± 0.66	Evasive
Waited to see what would happen	90	1	3	1.90 ± 0.69	Evasive
Tried to change the situation	105	1	3	1.90 ± 0.81	Confrontive
Tried to improve yourself in some way so you could handle the situation better	102	1	3	1.89 ± 0.72	Self-reliant
Told yourself that this problem was really not that important	92	1	3	1.87 ± 0.71	Evasive
Blamed your self for getting into such a situation	55	1	3	1.85 ± 0.83	Emotive
Practiced in your mind what had to be done	74	1	3	1.85 ± 0.81	Confrontive
Told yourself that the problem was someone else's fault	44	1	3	1.84 ± 0.64	Evasive
Resigned yourself to the situation because things looked hopeless	59	1	3	1.83 ± 0.70	Fatalistic
Took medications to reduce tension	43	1	3	1.81 ± 0.73	Palliative
Learned something new in order to deal with the problem better	80	1	3	1.81 ± 0.66	Confrontive
Told yourself that you were just having some bad luck	47	1	3	1.81 ± 0.77	Fatalistic
Exercised or did some physical activity	84	1	3	1.74 ± 0.81	Palliative
Let time take care of the problem	81	1	3	1.69 ± 0.68	Evasive
Took a drink to make yourself feel better	15	1	2	1.53 ± 0.52	Palliative
Did something impulsive or risky that you would not usually do	23	1	3	1.48 ± 0.59	Emotive

Appendix R
Rank ordered of the means ± SD of perceived effectiveness of coping subjects with one chronic illness

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	47	1	3	2.72 ± 0.50	Supportant
Avoided being with people	18	0	3	2.33 ± 0.91	Evasive
Tried to work out a compromise	20	1	3	2.20 ± 0.62	Confrontive
Used relaxation techniques	38	0	3	2.16 ± 0.92	Palliative
Set up a plan of action	26	0	3	2.12 ± 0.77	Confrontive
Tried to look at the problem objectively and see all sides	30	0	3	2.10 ± 0.80	Confrontive
Hoped that things would get better	42	0	3	2.07 ± 0.75	Optimistic
Tried to find out more about the problem	32	1	3	2.00 ± 0.76	Confrontive
Tried to distract yourself by doing something that you enjoy	37	0	3	1.97 ± 0.87	Palliative
Practiced in your mind what had to be done	16	1	3	1.94 ± 0.77	Confrontive
Talked the problem over with someone who had been in a similar situation	27	0	3	1.93 ± 0.83	Supportant
Tried to keep your life as normal as possible and not let the problem interfere	42	0	3	1.90 ± 0.88	Optimistic
Tried to improve yourself in some way so you could handle the situation better	30	1	3	1.90 ± 0.66	Self-reliant
Tried to handle things one step at a time	30	0	3	1.90 ± 0.76	Confrontive
Tried to keep the situation under control	35	0	3	1.89 ± 0.80	Confrontive
Compared yourself with other people who were in the same situation	27	0	3	1.85 ± 0.77	Optimistic
Talked the problem over with family or friends	31	0	3	1.84 ± 0.93	Supportant
Thought about how you had handled other problems in the past	23	1	3	1.83 ± 0.72	Self-reliant
Learned something new in order to deal with the problem better	22	1	3	1.82 ± 0.66	Confrontive

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to think positively	32	1	3	1.81 ± 0.69	Optimistic
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	37	0	3	1.81 ± 0.88	Supportant
Thought about the good things in your life	41	0	3	1.80 ± 0.84	Optimistic
Tried to keep busy	36	0	3	1.75 ± 0.77	Palliative
Told yourself that you could handle anything no matter how hard	32	0	3	1.75 ± 0.80	Self-reliant
Exercised or did some physical activity	34	0	3	1.74 ± 0.86	Palliative
Thought out different ways to handle the situation	27	0	3	1.70 ± 0.78	Confrontive
Tried to keep a sense of humor	36	0	3	1.69 ± 0.82	Optimistic
Tried to see the good side of the situation	30	0	3	1.67 ± 0.66	Optimistic
Told yourself not to worry because everything would work out fine	41	0	3	1.66 ± 0.82	Optimistic
Tried to change the situation	33	0	3	1.61 ± 0.83	Confrontive
Preferred to work things out yourself	38	0	3	1.61 ± 0.86	Self-reliant
Tried to keep your feelings under control	34	0	3	1.59 ± 0.82	Self-reliant
Slept more than usual	17	0	3	1.59 ± 1.00	Palliative
Tried to get away from the problem for a while	34	0	3	1.56 ± 0.89	Evasive
Tried to get out of the situation	31	0	3	1.55 ± 0.72	Evasive
Tried to put the problem out of your mind and think of something else	33	0	3	1.52 ± 0.71	Evasive
Told yourself that things could be much worse	37	0	3	1.51 ± 0.96	Optimistic
Took a drink to make yourself feel better	4	1	2	1.50 ± 0.58	Palliative
Wanted to be alone to think things out	22	0	3	1.50 ± 0.96	Self-reliant
Depended on others to help you out	35	1	2	1.49 ± 0.51	Supportant
Accepted the situation because very little could be done	42	0	3	1.45 ± 0.80	Fatalistic
Kept your feelings to yourself	31	0	2	1.35 ± 0.61	Self-reliant

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Took out your tensions on someone else	18	0	3	1.33 ± 1.03	Emotive
Told yourself that you were just having some bad luck	6	0	2	1.33 ± 1.03	Fatalistic
Took medications to reduce tension	3	1	2	1.33 ± 0.58	Palliative
Told yourself that this problem was really not that important	30	0	3	1.30 ± 0.88	Evasive
Day dreamed about a better life	24	0	3	1.21 ± 0.93	Evasive
Let time take care of the problem	22	0	3	1.18 ± 0.80	Evasive
Tried to ignore or avoid the problem	21	0	3	1.14 ± 0.91	Evasive
Waited to see what would happen	23	0	3	1.09 ± 0.90	Evasive
Ate or smoked more than usual	10	0	3	1.00 ± 1.05	Palliative
Put off facing up to the problem	22	0	2	0.95 ± 0.79	Evasive
Wished that the problem would go away	23	0	2	0.91 ± 0.73	Evasive
Expected the worst that could happen	26	0	3	0.85 ± 0.97	Fatalistic
Resigned yourself to the situation because things looked hopeless	12	0	2	0.83 ± 0.72	Fatalistic
Blamed your self for getting into such a situation	16	0	2	0.81 ± 0.83	Emotive
Got mad and let off steam	34	0	3	0.76 ± 0.99	Emotive
Told yourself that the problem was someone else's fault	10	0	2	0.60 ± 0.70	Evasive
Did something impulsive or risky that you would not usually do	10	0	2	0.60 ± 0.70	Emotive
Worried about the problem	30	0	3	0.53 ± 0.90	Emotive

Appendix S

Rank ordered of the means ± SD of perceived effectiveness of coping strategies of subjects with two or more chronic illnesses

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Prayed or put your trust in God	137	1	3	2.66 ± 0.64	Supportant
Tried to find out more about the problem	98	1	3	2.08 ± 0.78	Confrontive
Used relaxation techniques	106	1	3	2.04 ± 0.69	Palliative
Talked the problem over with someone who had been in a similar situation	112	0	3	2.04 ± 0.70	Supportant
Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	113	0	3	2.00 ± 0.80	Supportant
Tried to keep a sense of humor	122	0	3	1.91 ± 0.79	Optimistic
Tried to keep your life as normal as possible and not let the problem interfere	128	0	3	1.91 ± 0.86	Optimistic
Tried to handle things one step at a time	106	0	3	1.91 ± 0.79	Confrontive
Thought about how you had handled other problems in the past	87	0	3	1.90 ± 0.81	Self-reliant
Tried to keep the situation under control	113	0	3	1.88 ± 0.96	Confrontive
Thought about the good things in your life	120	0	3	1.88 ± 0.93	Optimistic
Learned something new in order to deal with the problem better	80	0	3	1.87 ± 0.75	Confrontive
Set up a plan of action	85	0	3	1.87 ± 0.84	Confrontive
Hoped that things would get better	126	0	3	1.85 ± 0.85	Optimistic
Exercised or did some physical activity	84	0	3	1.85 ± 0.92	Palliative
Tried to work out a compromise	88	0	3	1.84 ± 0.73	Confrontive
Compared yourself with other people who were in the same situation	104	0	3	1.84 ± 0.75	Optimistic
Talked the problem over with family or friends	116	0	3	1.83 ± 0.85	Supportant
Tried to think positively	107	0	3	1.82 ± 0.75	Optimistic

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Tried to look at the problem objectively and see all sides	95	0	3	1.82 ± 0.82	Confrontive
Tried to improve yourself in some way so you could handle the situation better	102	0	3	1.80 ± 0.70	Self-reliant
Tried to keep busy	109	0	3	1.79 ± 0.72	Palliative
Tried to distract yourself by doing something that you enjoy	112	0	3	1.78 ± 0.80	Palliative
Told yourself that you could handle anything no matter how hard	104	0	3	1.77 ± 0.84	Self-reliant
Tried to put the problem out of your mind and think of something else	113	0	3	1.74 ± 0.75	Evasive
Tried to see the good side of the situation	107	0	3	1.73 ± 0.95	Optimistic
Told yourself not to worry because everything would work out fine	114	0	3	1.71 ± 0.86	Optimistic
Tried to keep your feelings under control	111	0	3	1.69 ± 0.82	Self-reliant
Kept your feelings to yourself	96	0	3	1.69 ± 0.86	Self-reliant
Thought out different ways to handle the situation	102	0	3	1.69 ± 0.89	Confrontive
Avoided being with people	57	0	3	1.68 ± 0.95	Evasive
Accepted the situation because very little could be done	126	0	3	1.68 ± 0.89	Fatalistic
Tried to get away from the problem for a while	103	0	3	1.68 ± 0.87	Evasive
Practiced in your mind what had to be done	73	0	3	1.66 ± 0.89	Confrontive
Tried to get out of the situation	108	0	3	1.66 ± 0.78	Evasive
Took medications to reduce tension	43	0	3	1.65 ± 0.95	Palliative
Preferred to work things out yourself	105	0	3	1.64 ± 0.81	Self-reliant
Tried to change the situation	105	0	3	1.64 ± 0.90	Confrontive
Day dreamed about a better life	90	0	3	1.60 ± 0.93	Evasive
Told yourself that things could be much worse	113	0	3	1.59 ± 0.92	Optimistic
Depended on others to help you out	105	0	3	1.55 ± 0.75	Supportant

Coping Strategy	N	Minimum	Maximum	Mean ± SD	Coping Style
Told yourself that this problem was really not that important	92	0	3	1.52 ± 0.80	Evasive
Wanted to be alone to think things out	94	0	3	1.48 ± 0.84	Self-reliant
Slept more than usual	58	0	3	1.47 ± 0.84	Palliative
Did something impulsive or risky that you would not usually do	23	0	3	1.39 ± 0.94	Emotive
Tried to ignore or avoid the problem	86	0	3	1.37 ± 0.80	Evasive
Took out your tensions on someone else	73	0	3	1.36 ± 0.86	Emotive
Let time take care of the problem	81	0	3	1.31 ± 0.78	Evasive
Told yourself that you were just having some bad luck	47	0	3	1.28 ± 0.93	Fatalistic
Put off facing up to the problem	84	0	3	1.26 ± 0.78	Evasive
Blamed your self for getting into such a situation	55	0	3	1.25 ± 0.78	Emotive
Resigned yourself to the situation because things looked hopeless	59	0	3	1.24 ± 0.86	Fatalistic
Told yourself that the problem was someone else's fault	44	0	3	1.20 ± 0.82	Evasive
Wished that the problem would go away	92	0	3	1.09 ± 0.92	Evasive
Expected the worst that could happen	96	0	3	1.07 ± 0.90	Fatalistic
Ate or smoked more than usual	37	0	3	1.05 ± 1.00	Palliative
Waited to see what would happen	90	0	3	1.01 ± 0.83	Evasive
Took a drink to make yourself feel better	15	0	2	1.00 ± 0.76	Palliative
Got mad and let off steam	103	0	3	1.00 ± 0.91	Emotive
Worried about the problem	104	0	3	0.63 ± 0.92	Emotive

استراتيجيات التأقلم مع الأمراض المزمنة لدى المرضى الأردنيين كبار السن

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ملخـص

ازداد في السنوات الأخيرة عدد الناس المعرضين للإصابة بالأمراض المزمنة مع تقدمهم بالسن و تعتبر الأمراض المزمنة أكثر الأسباب المسببة للوفاة في العالم و في الأردن يعتبر داء السكري وأمراض القلب وارتفاع التوتر الشرياني وأمراض المفاصل والسكتة الدماغية والربو والاكتئاب أكثر الأمراض المزمنة شيوعاً. لذلك فإن المعالجة الفعالة لهذه الأمراض تعتبر تحدياً لمقدمي الرعاية الصحية وللمرضى كبار السن على حد سواء، لأن كلاً من الطرفين يلعب دوراً رئيساً في نجاح المعالجة طويلة الأمد لهذه الأمراض.

والغرض من هذه الدراسة هو وصف استراتيجيات التأقلم لدى المرضى كبار السن مع الأمراض المزمنة الأكثر شيوعاً. اشتملت هذه الدراسة على الأسئلة البحثية التالية: ما هي استراتيجيات التأقلم المستخدمة لدى المرضى كبار السن للتعامل مع الأمراض المزمنة؟ هل توجد اختلافات بين الجنسين في استراتيجيات التأقلم المستخدمة من قبل المرضى كبار السن ؟ هل توجد اختلافات في استراتيجيات التأقلم المستخدمة من قبل المرضى كبار السن حسب الأمراض المزمنة الأكثر انتشارا؟ هل يوجد اختلاف في استراتيجيات التأقلم المستخدمة بين المرضى الذين يعانون من مرض مزمن واحد مقارنةً بالمرضى الذين يعانون من أكثر من مرض؟.

تم استخدام عينة حصصية مكونة من المرضى المصابين بداء السكري أو أمراض القلب أو بالمرضين معاً ممن يراجعون العيادات في مستشفى الحسين ومركز الملكة علياء لأمراض وجراحة القلب وجمعت البيانات من خلال إجراء المقابلة المنظمة.

تألفت العينة من 114 من الذكور و 70 من الاناث و كان أغلب المشاركين من المتزوجين وكان خمسة وسبعون مريضاً يعانون من أمراض القلب، وسبعة وخمسون مريضاً يعانون من داء السكري, واثنان وخمسون مريضاً يعانون من أمراض القلب والسكري معاً.

أظهرت النتائج بأن الإستراتيجية الأكثر استخداما في المجموعات المرضية الثلاث هي "الصلاة والتوكل على الله" كما أظهرت النتائج بأن المرضى في المجموعات المرضية الثلاث يعتبرون هذه الإستراتيجية هي الأكثر فعالية ولم فروق فروق ذات دلالة إحصائية بين المجموعات الثلاث فيما يخص استخدام وفعالية هذه الإستراتيجية. كما بينت النتائج بأن أكثر أنماط التأقلم المستخدمة لدى المرضى هي النمط المعتمد على الدعم والنمط العاطفي ولا توجد فروق ذات دلالة إحصائية في استخدام هذين النمطين. كما أظهرت النتائج بأن أنماط التأقلم التي ظهر فيها اختلاف ذو دلالة إحصائية هي النمط الهروبي والنمط المعتمد على الذات حيث يستخدم المرضى الرجال هذين النمطين أكثر من

المرضى النساء. كما أظهرت النتائج بأن المرضى الرجال يستخدمون استراتيجيات التأقلم المعتمدة على العاطفة أكثر من النساء وهذا الاختلاف دال إحصائياً.

توفر نتائج هذه الدراسة قاعدة بيانات عن كيفية تأقلم المرضى الأردنيين كبار السن مع الأمراض المزمنة ويمكن استخدام هذه البيانات من قبل الممرضين والممرضات واعضاء الفريق الصحي ليكونوا أكثر قدرة تشجيع المرضى لتبني استراتيجيات تعتمد على مواجهة المشكلة.

الكلمات الدالة: تأقلم، أمراض مزمنة، كبار السن، الأردن.